Services & IT

Delivering Power at the Point-of-Need

Session 607

These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

Services & IT

Delivering Power at the Point-of-Need

Sal Soghoian
Product Manager Automation Technologies

Steve Hayman
Señor Know-I.T.-All

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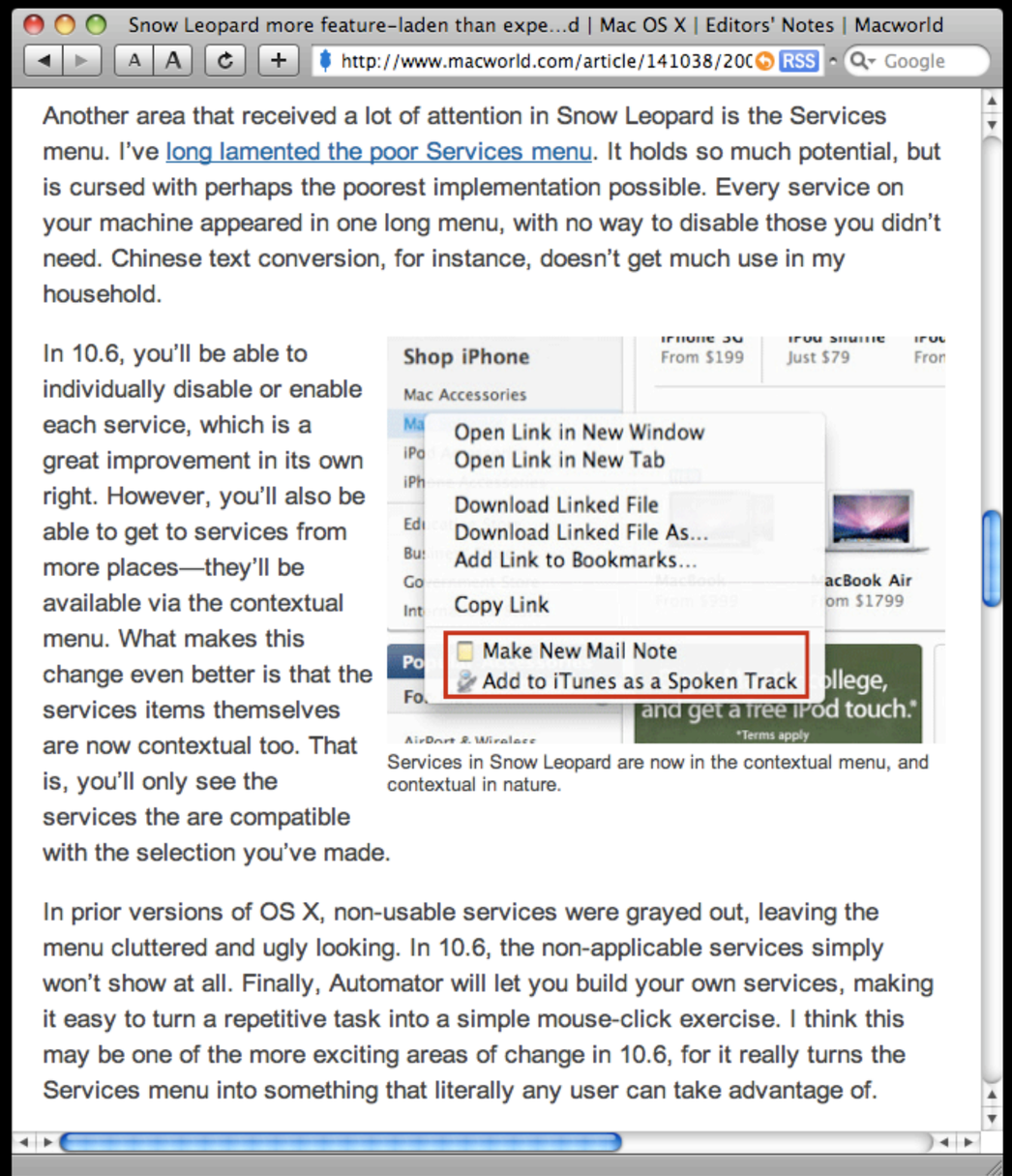
“I think this may be one of the more exciting areas of change in 10.6 …”

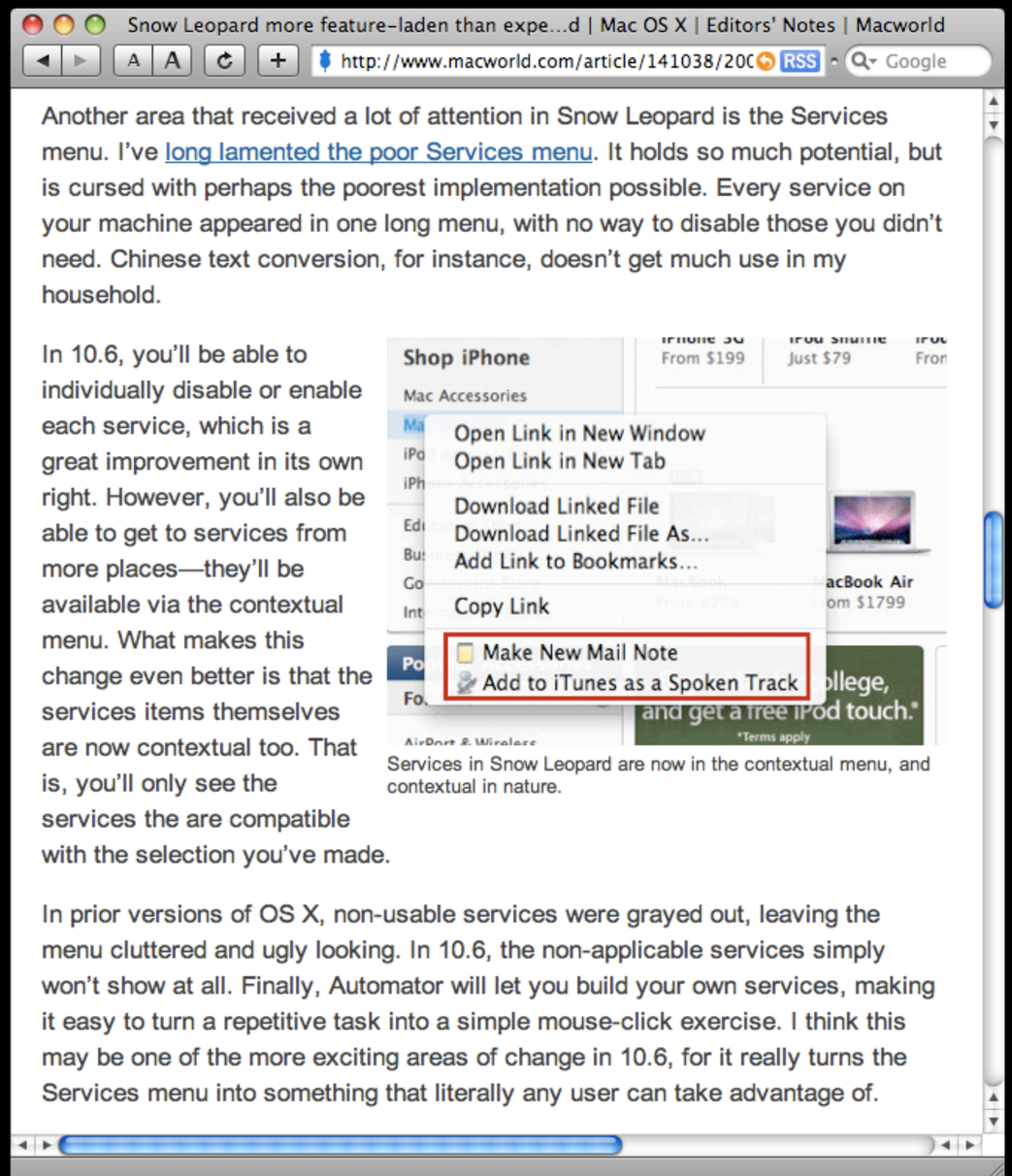
Rob Griffiths , Macworld



Macworld

“for it really turns the Services menu into something that literally any user can take advantage of.”

Rob Griffiths , Macworld



Macworld

“I don’t have time to learn how to use the dishwasher…
I’m busy washing dishes.”

Sarah M., family reunion circa 1968

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Introduction

- Computers and devices are made easier to use when:
  - Assistance is made available close to the current selection or insertion point
  - Only the assistance options relevant to the selection are shown
- Services in Snow Leopard address the “Point-of-Need”

What You'll Learn

- Changes in Services for Snow Leopard
- Using Services to manage networked computers

Administrator’s Viewpoint

Client's Viewpoint

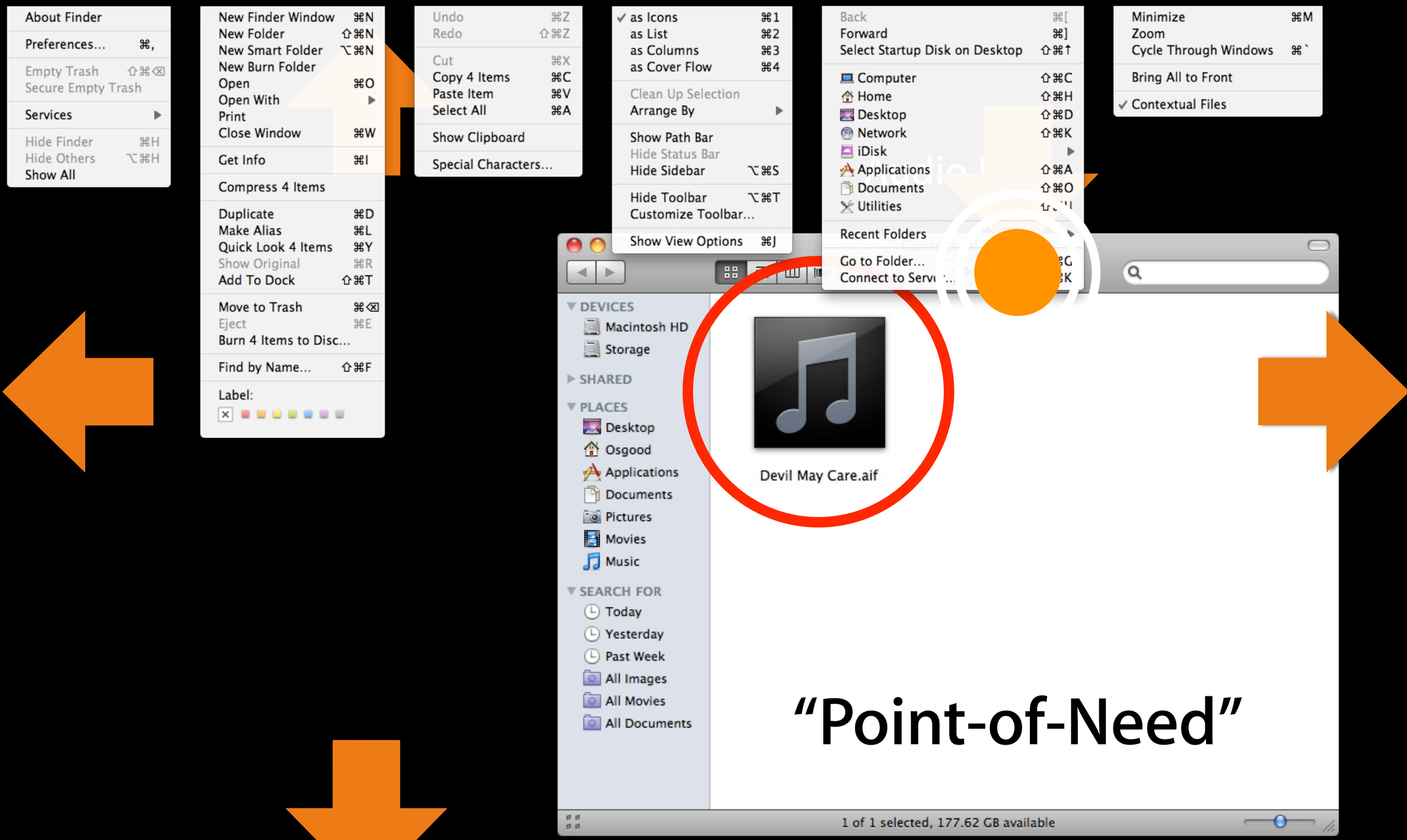
Services

- The Services architecture enables the functionality of applications and system frameworks to be used to process the selection of the current application

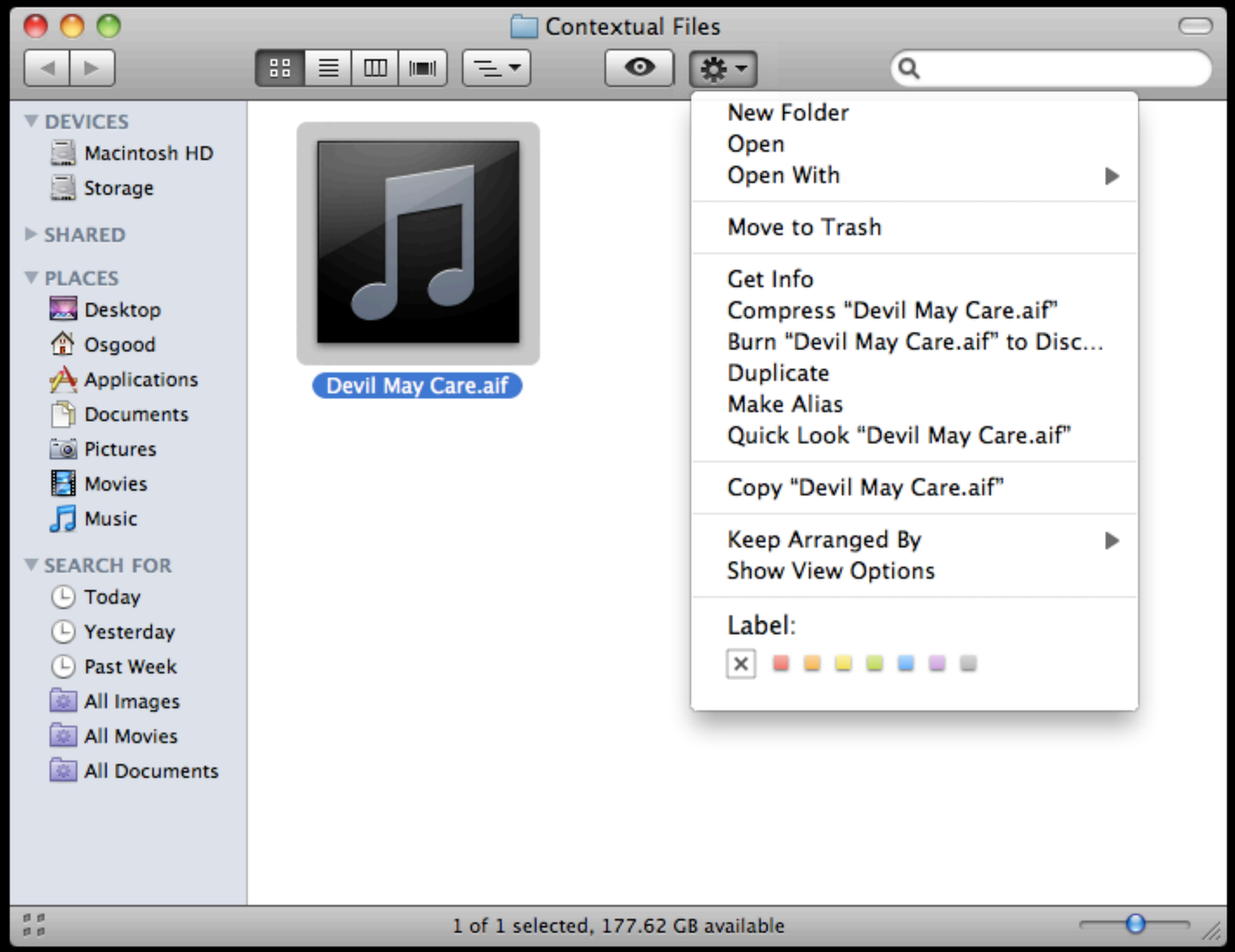
“Point-of-Need”

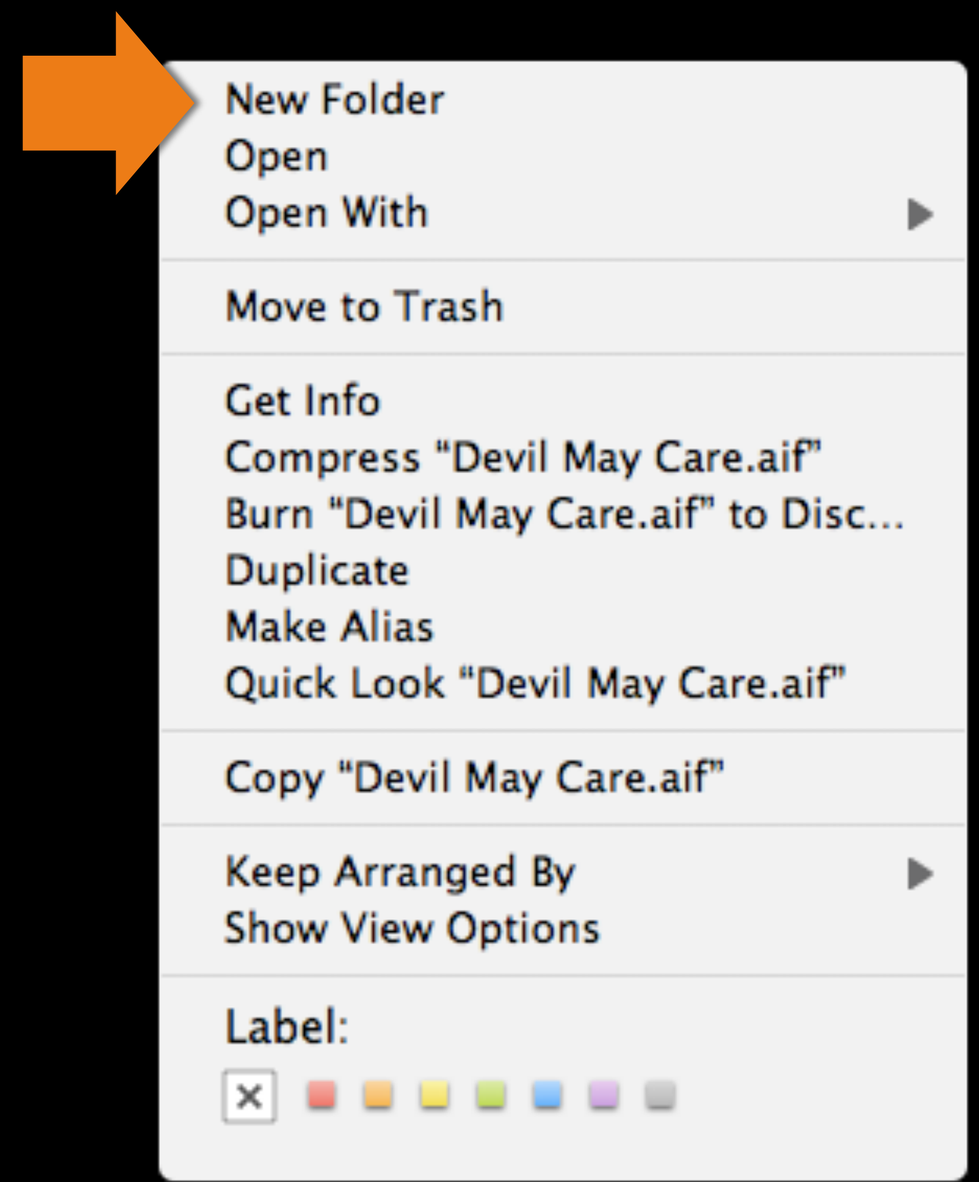
Power When and Where You Need It

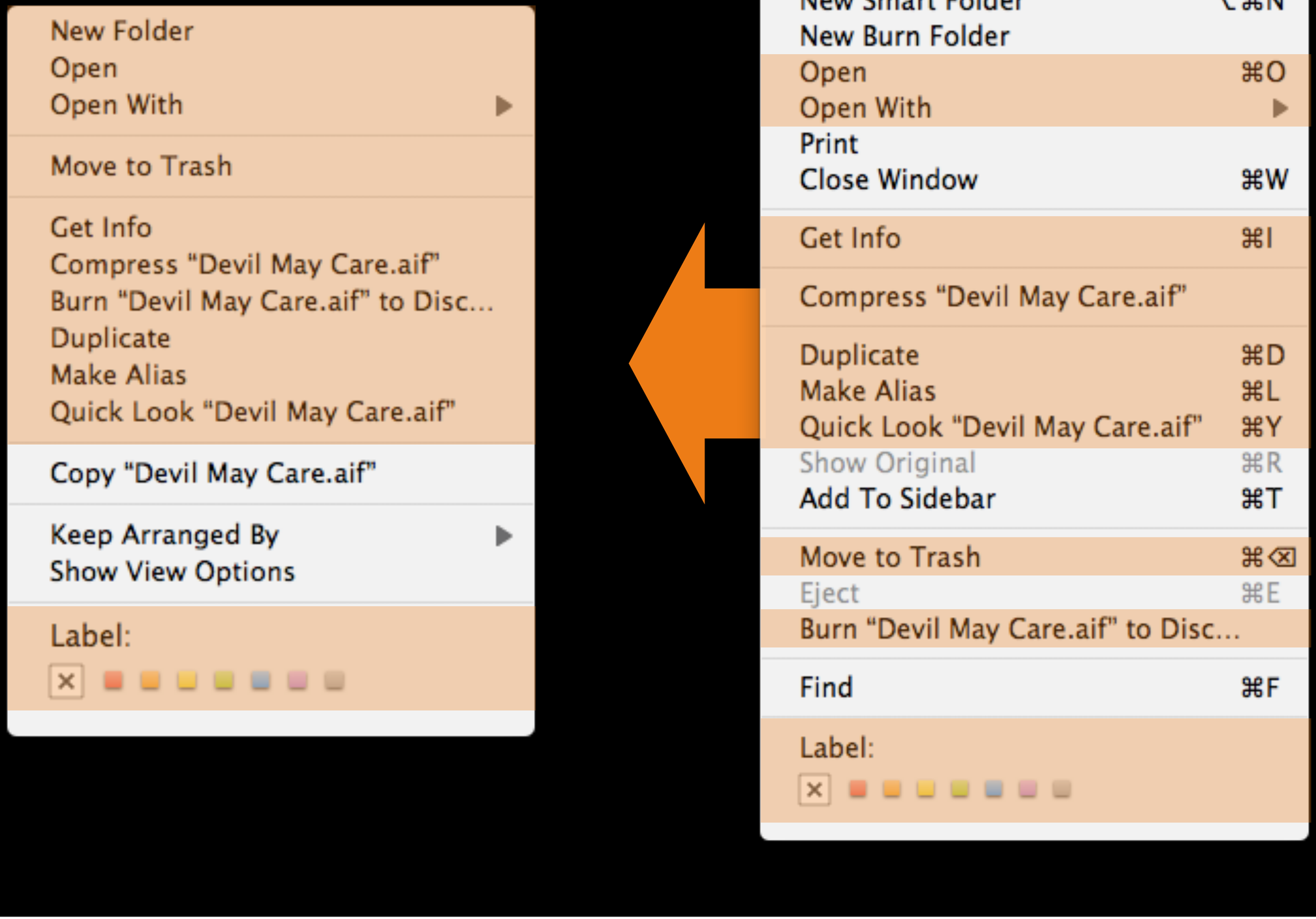
Point-of-Need: *the location where you require assistance*


About Finder
Preferences... ⌘,
Empty Trash ⇧⌘⌫
Secure Empty Trash
Services
Hide Finder ⌘H
Hide Others ⌥⌘H
Show All
New Finder Window ⌘N
New Folder ⇧⌘N
New Smart Folder ⌥⌘N
New Burn Folder
Open ⌘O
Open With
Print
Close Window ⌘W
Get Info ⌘I
Compress 4 Items
Duplicate ⌘D
Make Alias ⌘L
Quick Look 4 Items ⌘Y
Show Original ⌘R
Add To Dock ⇧⌘T
Move to Trash ⌘⌫
Eject ⌘E
Burn 4 Items to Disc...
Find by Name... ⇧⌘F
Label:
Undo ⌘Z
Redo ⇧⌘Z
Cut ⌘X
Copy 4 Items ⌘C
Paste Item ⌘V
Select All ⌘A
Show Clipboard
Special Characters...
as Icons ⌘1
as List ⌘2
as Columns ⌘3
as Cover Flow ⌘4
Clean Up Selection
Arrange By
Show Path Bar
Hide Status Bar
Hide Sidebar ⌥⌘S
Hide Toolbar ⌥⌘T
Customize Toolbar...
Show View Options ⌘J
Back ⌘[
Forward ⌘]
Select Startup Disk on Desktop ⇧⌘↑
Computer ⇧⌘C
Home ⇧⌘H
Desktop ⇧⌘D
Network ⇧⌘K
iDisk
Applications ⇧⌘A
Documents ⇧⌘O
Utilities
Recent Folders
Go to Folder... ⇧⌘G
Connect to Server... ⌘K
Minimize ⌘M
Zoom
Cycle Through Windows ⌘`
Bring All to Front
Contextual Files
DEVICES
Macintosh HD
Storage
SHARED
PLACES
Desktop
Osgood
Applications
Documents
Pictures
Movies
Music
SEARCH FOR
Today
Yesterday
Past Week
All Images
All Movies
All Documents
Devil May Care.aif
1 of 1 selected, 177.62 GB available
“Point-of-Need”

Action Menu


Contextual Files
DEVICES
Macintosh HD
Storage
SHARED
PLACES
Desktop
Osgood
Applications
Documents
Pictures
Movies
Music
SEARCH FOR
Today
Yesterday
Past Week
All Images
All Movies
All Documents
Devil May Care.aif
New Folder
Open
Open With
Move to Trash
Get Info
Compress "Devil May Care.aif"
Burn "Devil May Care.aif" to Disc...
Duplicate
Make Alias
Quick Look "Devil May Care.aif"
Copy "Devil May Care.aif"
Keep Arranged By
Show View Options
Label:
1 of 1 selected, 177.62 GB available


New Folder
Open
Open With
Move to Trash
Get Info
Compress “Devil May Care.aif”
Burn “Devil May Care.aif” to Disc...
Duplicate
Make Alias
Quick Look “Devil May Care.aif”
Copy “Devil May Care.aif”
Keep Arranged By
Show View Options
Label:


New Folder
Open
Open With
Move to Trash
Get Info
Compress "Devil May Care.aif"
Burn "Devil May Care.aif" to Disc...
Duplicate
Make Alias
Quick Look "Devil May Care.aif"
Copy "Devil May Care.aif"
Keep Arranged By
Show View Options
Label:
New Finder Window ⌘N
New Folder ⇧⌘N
New Smart Folder ⌥⌘N
New Burn Folder
Open ⌘O
Open With
Print
Close Window ⌘W
Get Info ⌘I
Compress "Devil May Care.aif"
Duplicate ⌘D
Make Alias ⌘L
Quick Look "Devil May Care.aif" ⌘Y
Show Original ⌘R
Add To Sidebar ⌘T
Move to Trash ⌘⌫
Eject ⌘E
Burn "Devil May Care.aif" to Disc...
Find ⌘F
Label:

SERVICES

Cheetah
March 2001

Puma
September 2001

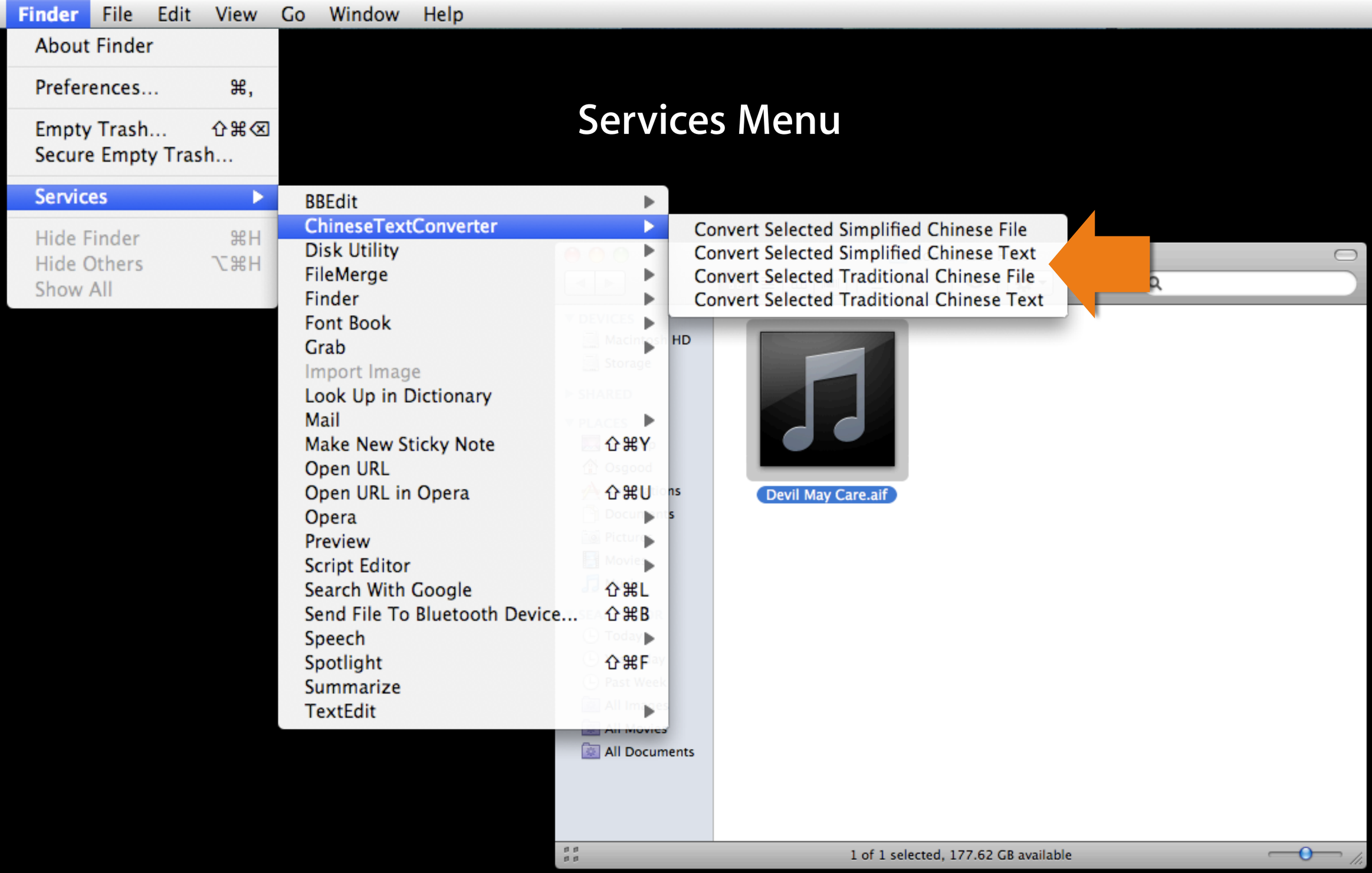
Jaguar
July 2002

Panther
October 2003

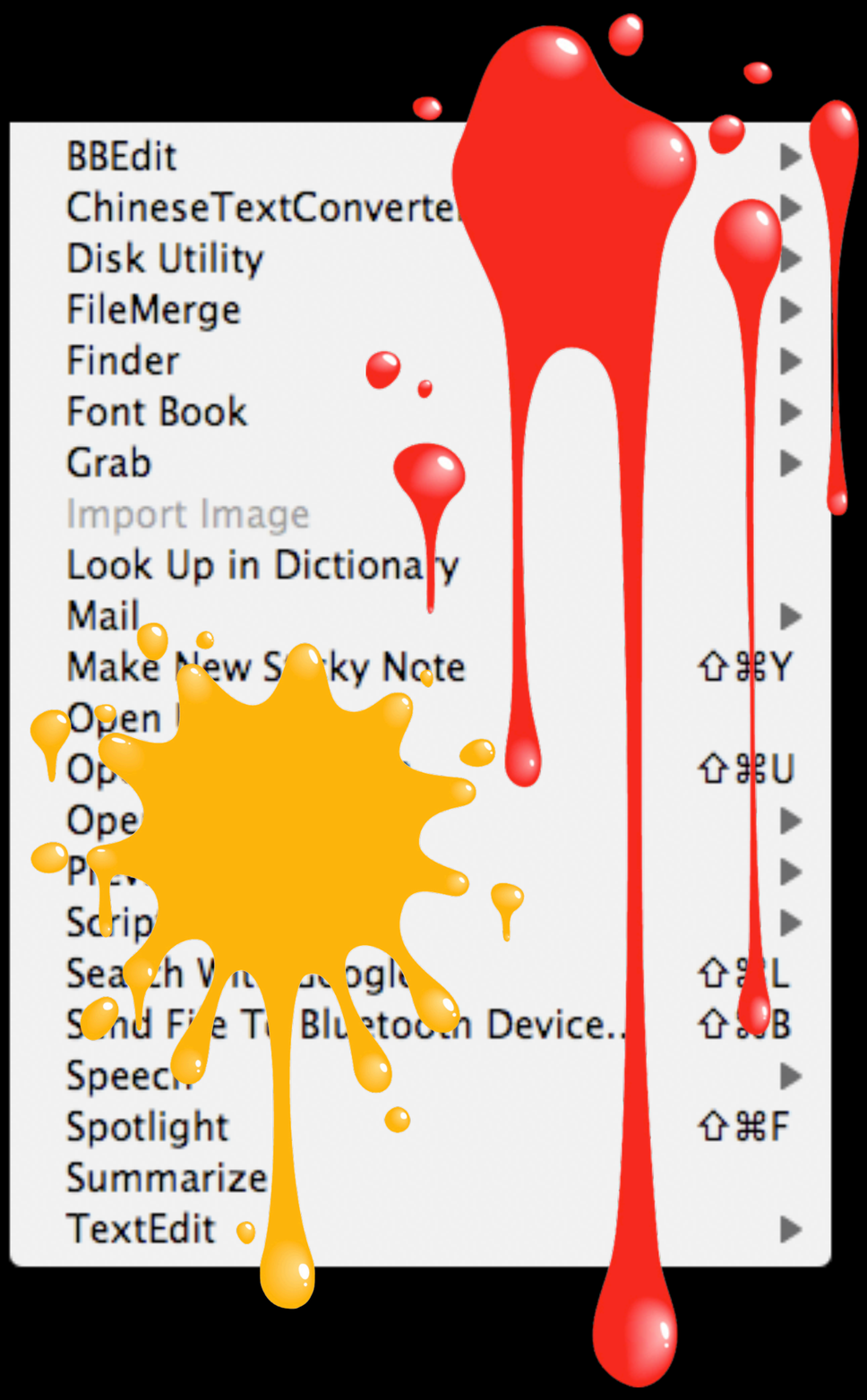
Tiger
April 2005

Leopard
October 2007

Services Menu



BBEdit
ChineseTextConverter
Disk Utility
FileMerge
Finder
Font Book
Grab
Import Image
Look Up in Dictionary
Mail
Make New Sticky Note
Open URL
Open URL in Opera
Opera
Preview
Script Editor
Search With Google
Send File To Bluetooth
Speech
Spotlight
Summarize
TextEdit

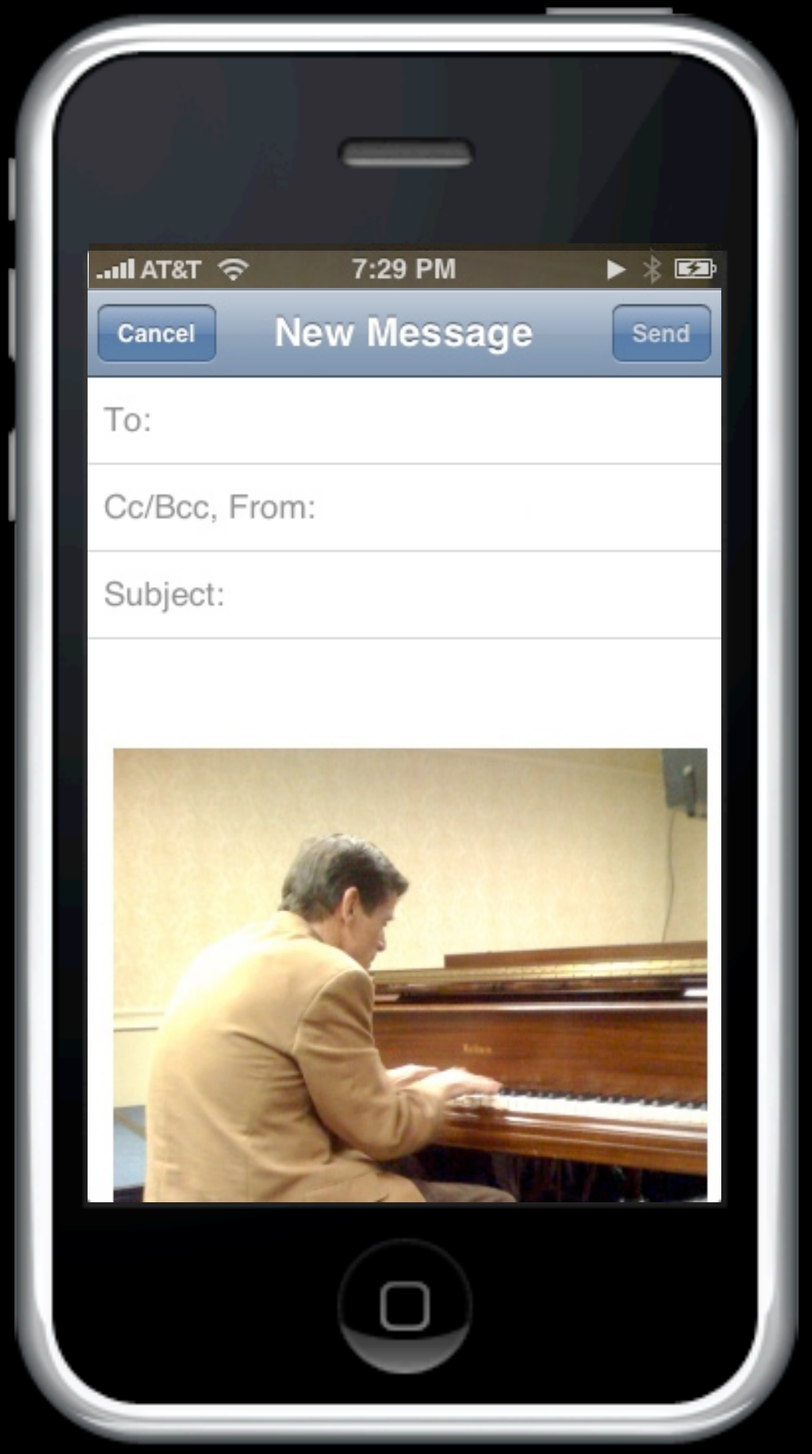


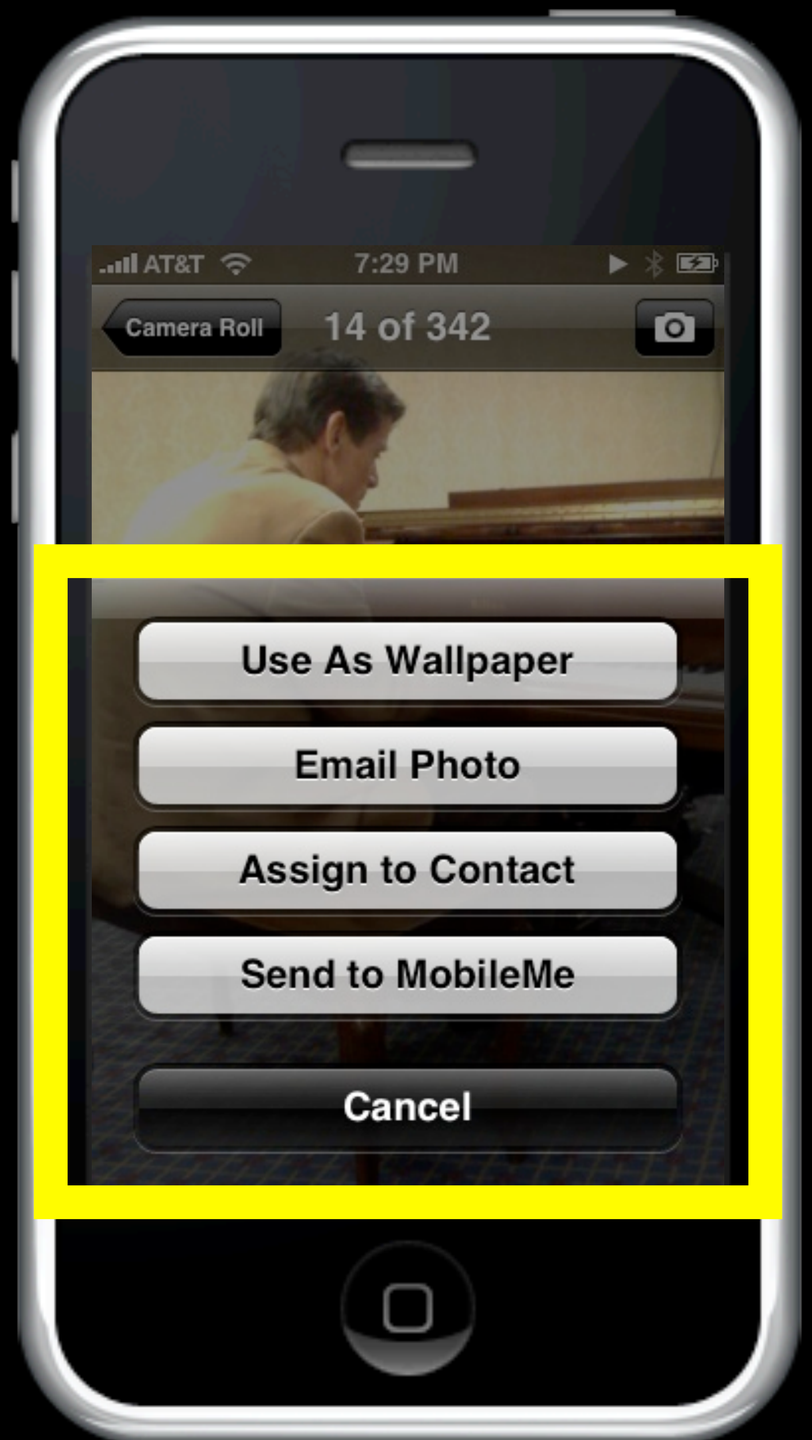
“Olde” Services Menu

- Pseudo-Contextual
- Not-Convenient
- Not-Configurable
- Not-Customizable
- Messy

AT&T
9:41 AM
SMS
Text
Monday
9
Calendar
Photos
Camera
YouTube
Stocks
280
Maps
73°
Weather
Clock
Calculator
Notes
Settings
iTunes
App Store
iPod

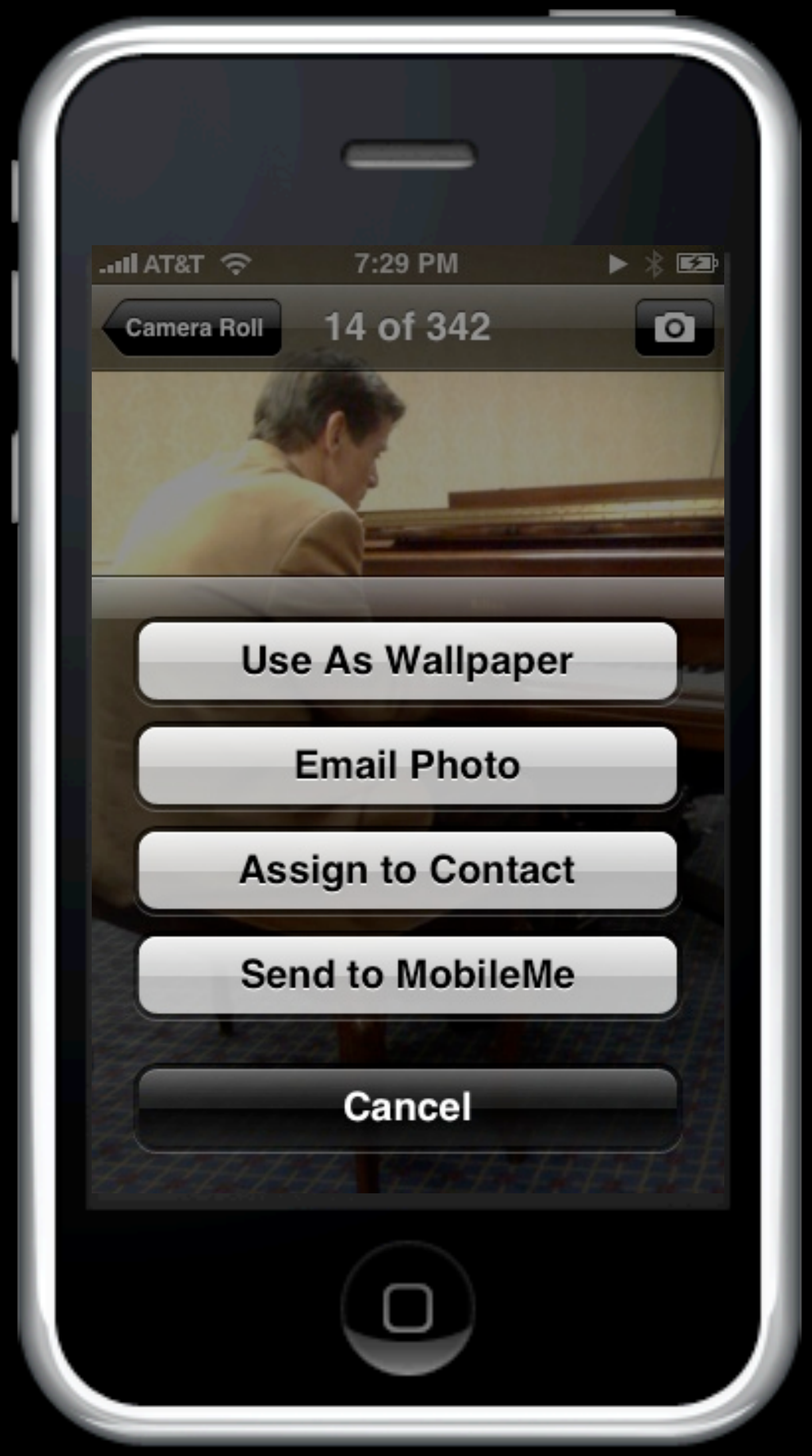
AT&T
7:29 PM
Camera Roll
14 of 342
Use As Wallpaper
Email
Assign to Contact
Send to MobileMe
Cancel


AT&T
7:29 PM
Cancel
New Message
Send
To:
Cc/Bcc, From:
Subject:



"Point-of-Need" Tools

- Contextual
- Convenient (Close-at-Hand)
- Configurable
- Customizable



"Point-of-Need" Tools

- **Contextual**
- **Convenient**
- Configurable
- Customizable

“Point-of-Need” Tools

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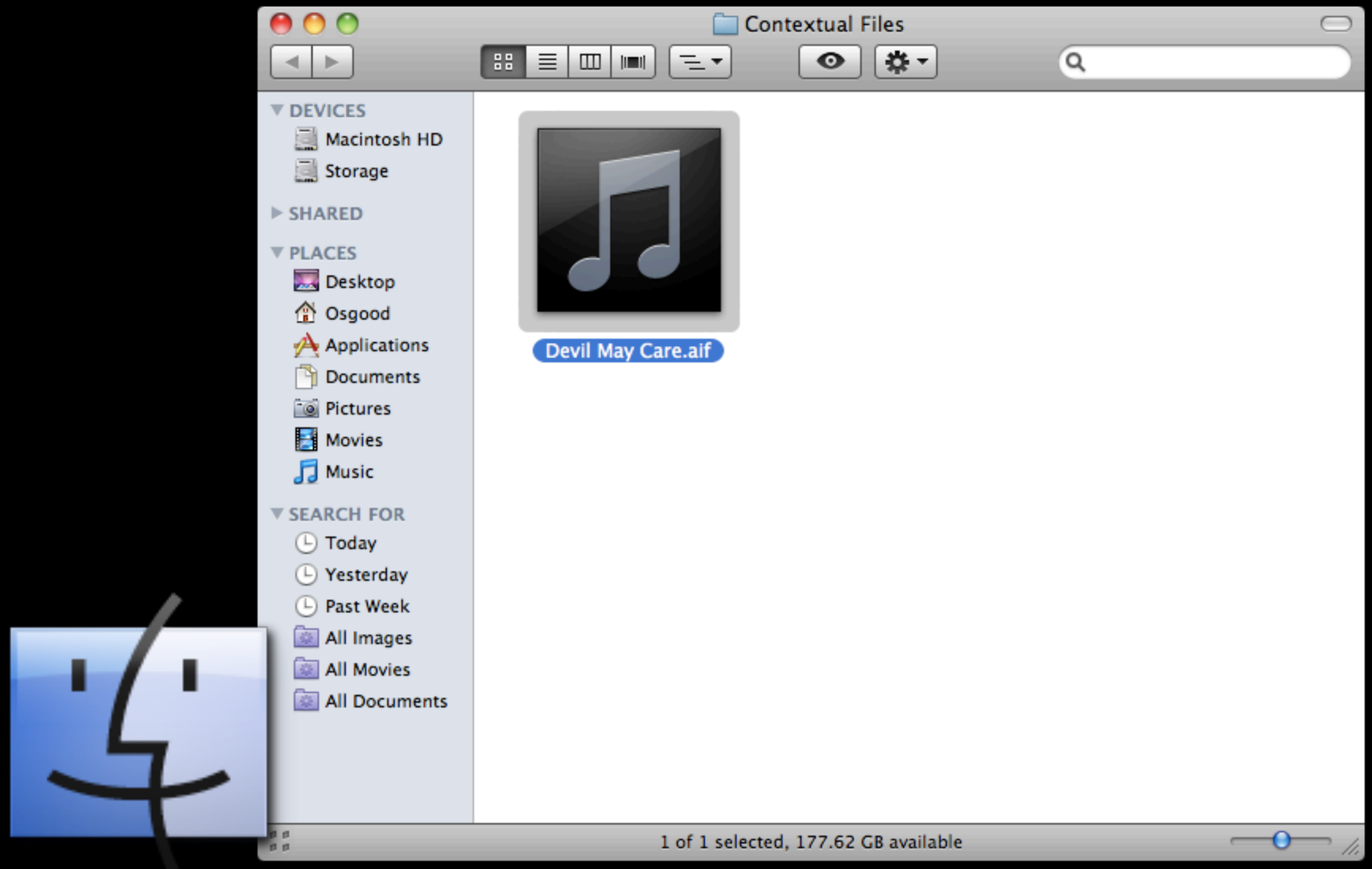
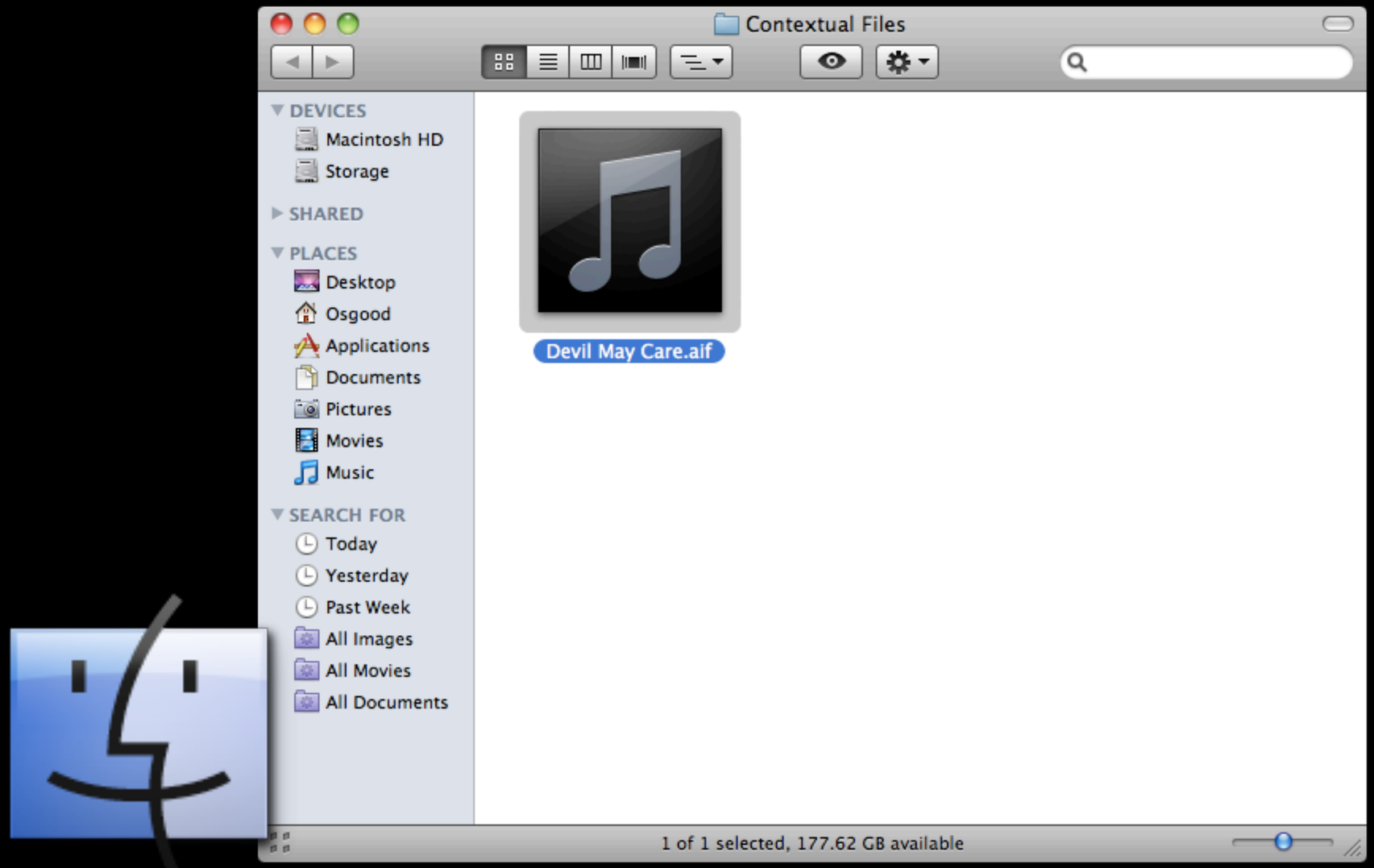


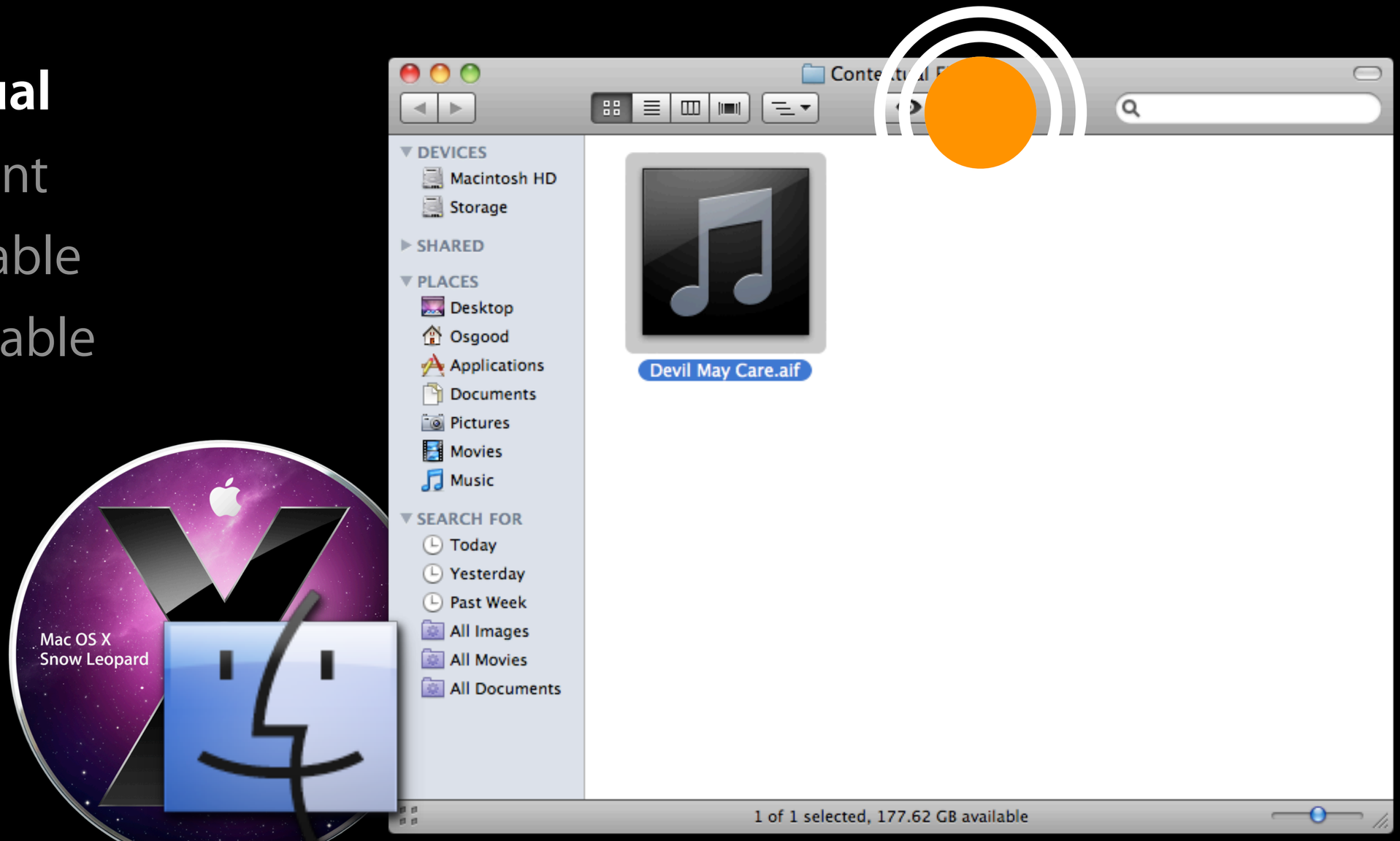
“Point-of-Need” Tools

- Contextual
- Convenient
- Configurable
- Customizable



“New” Services

- **Contextual**
- Convenient
- Configurable
- Customizable



“New” Services

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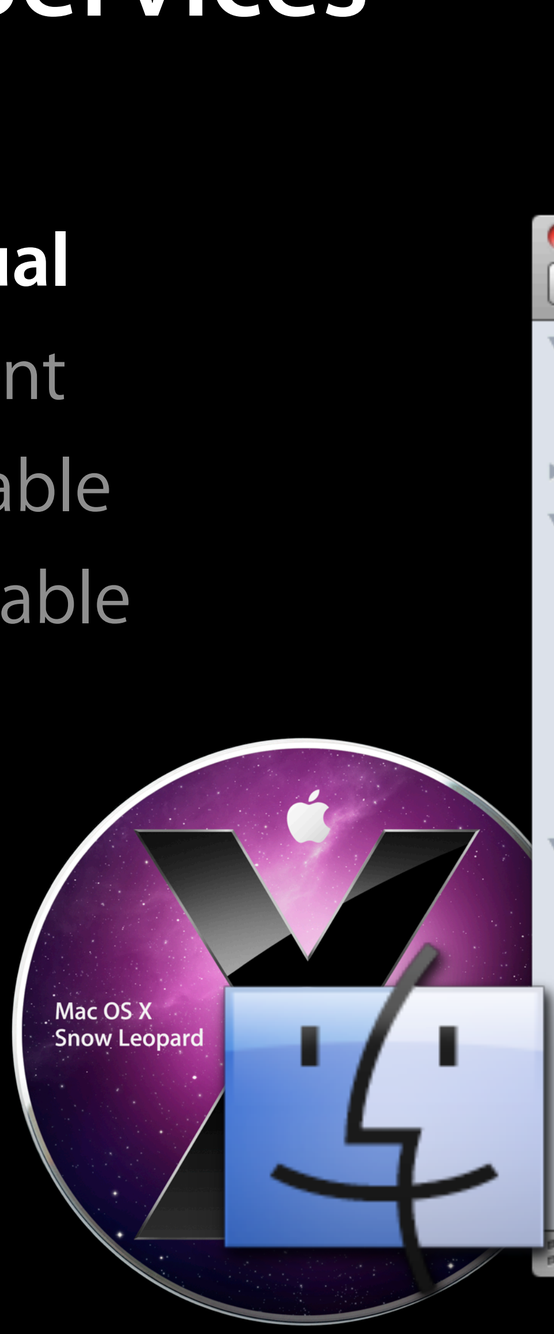
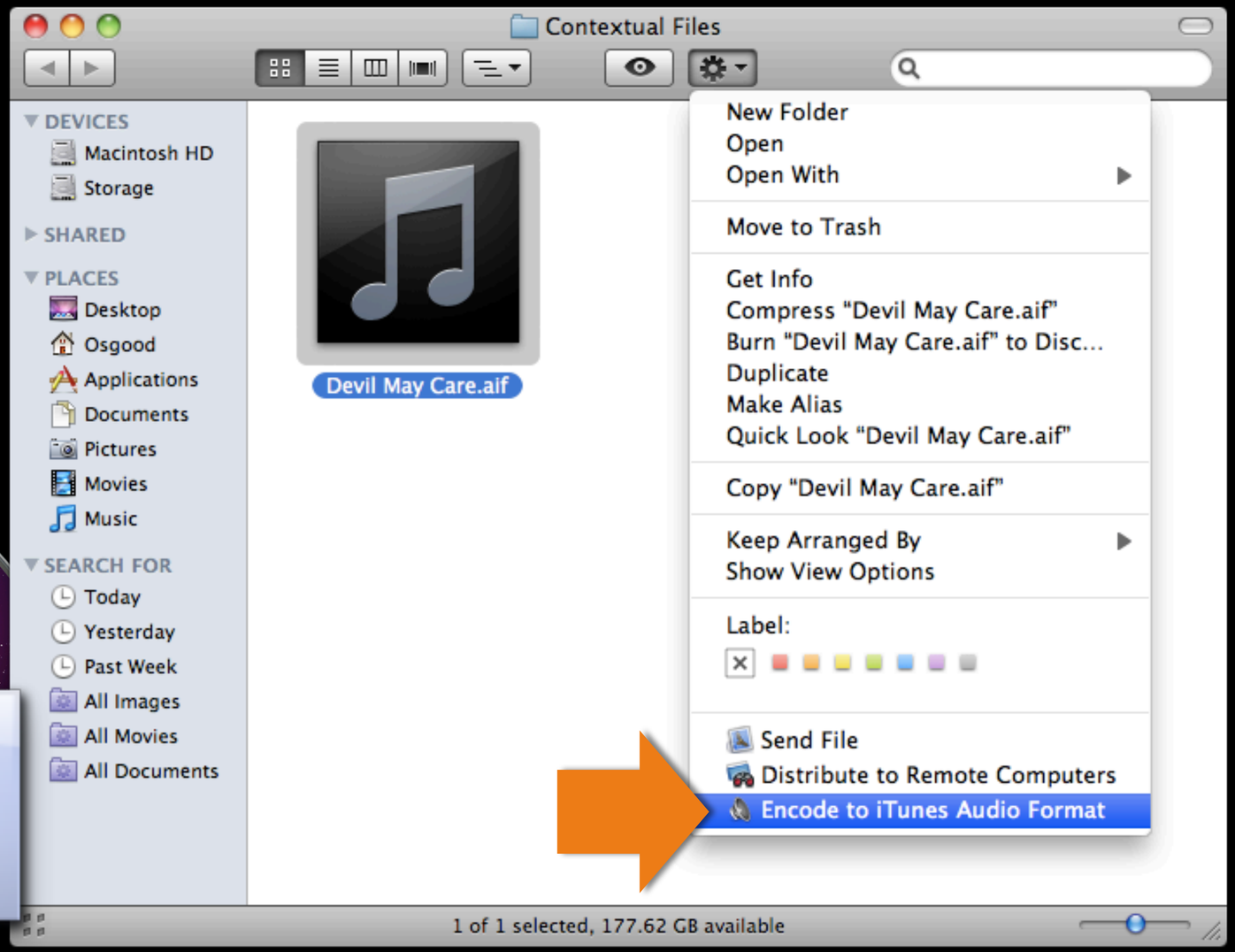


Audio File



“New” Services

- **Contextual**
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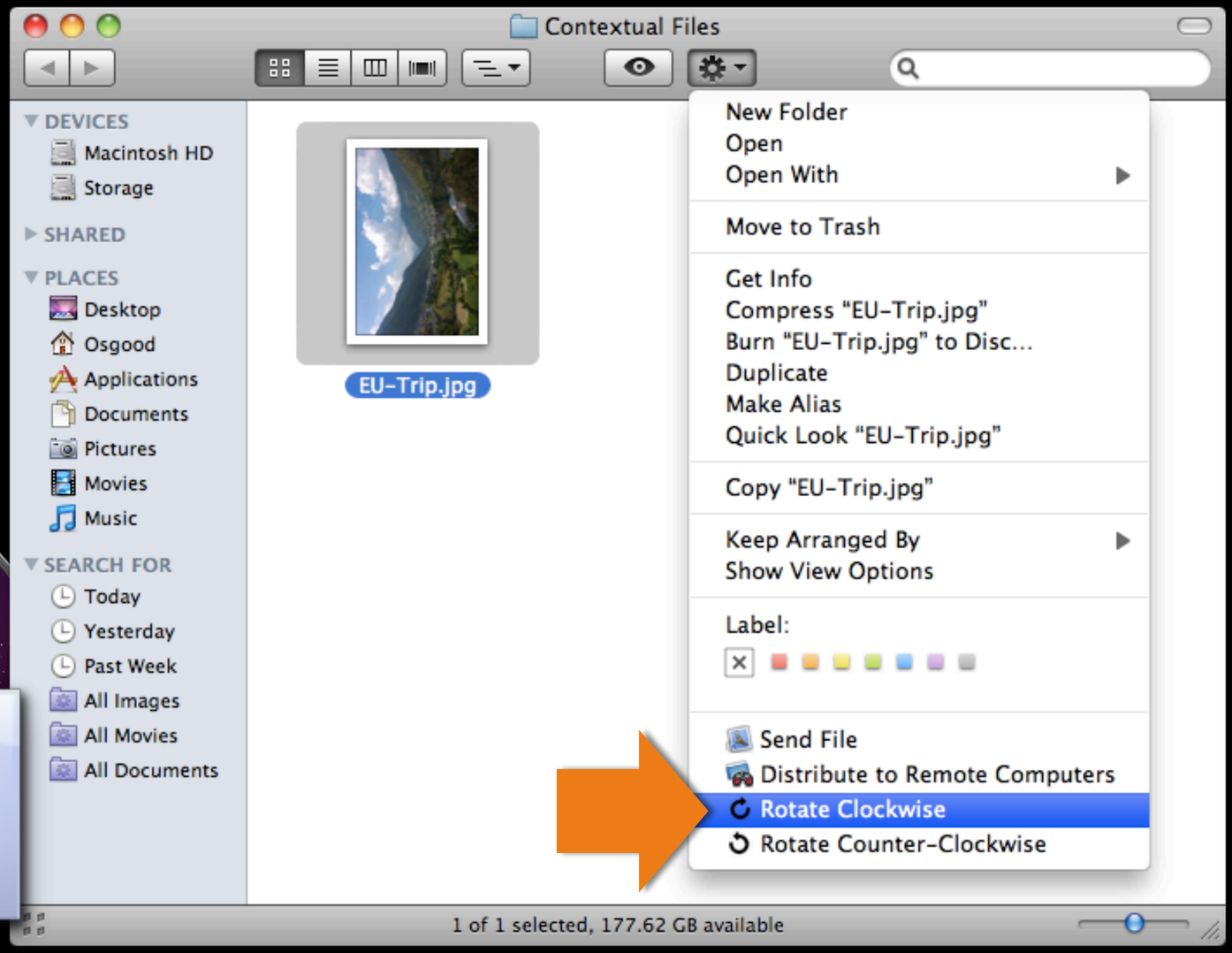
Image File



“New” Services

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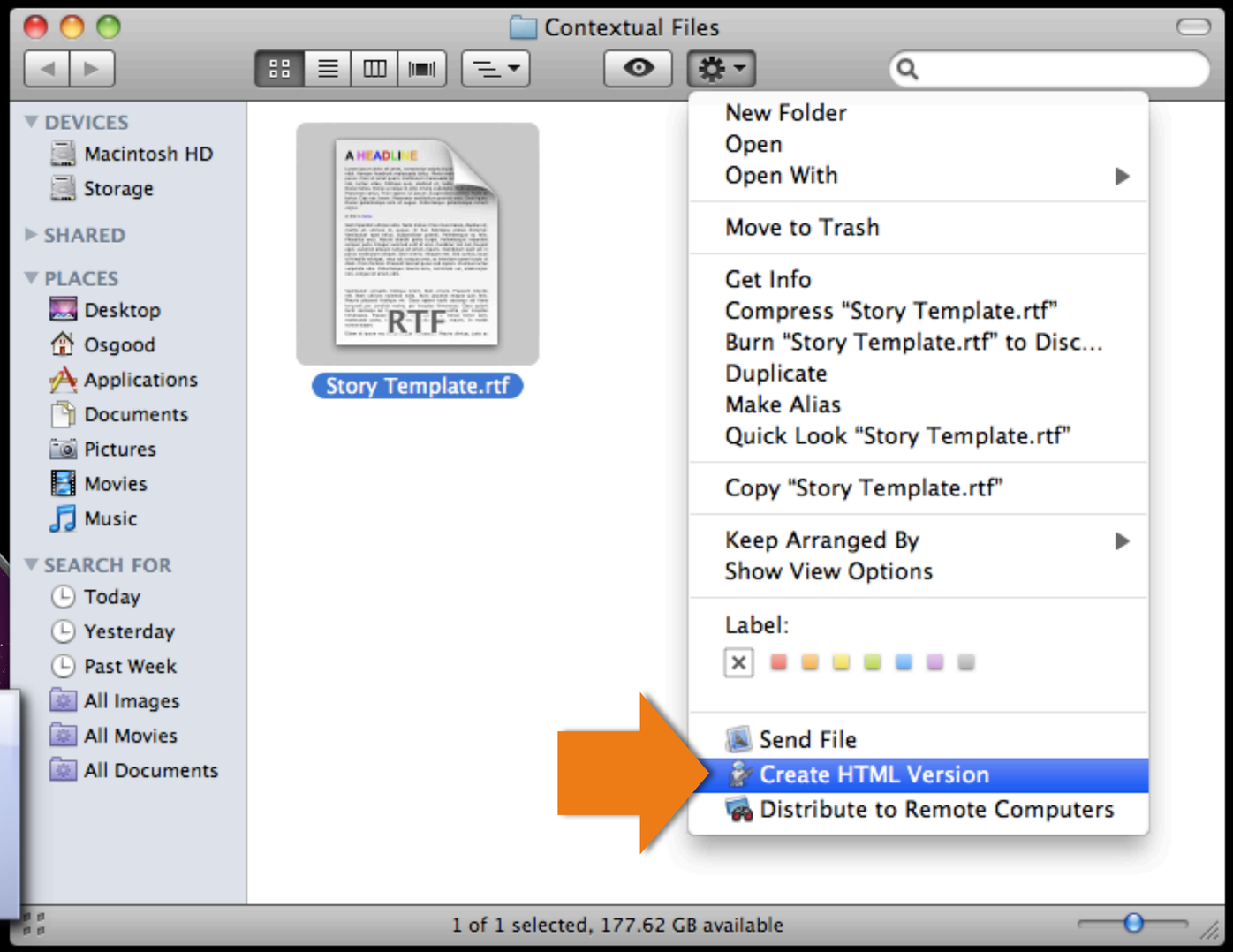
RTF File



“New” Services

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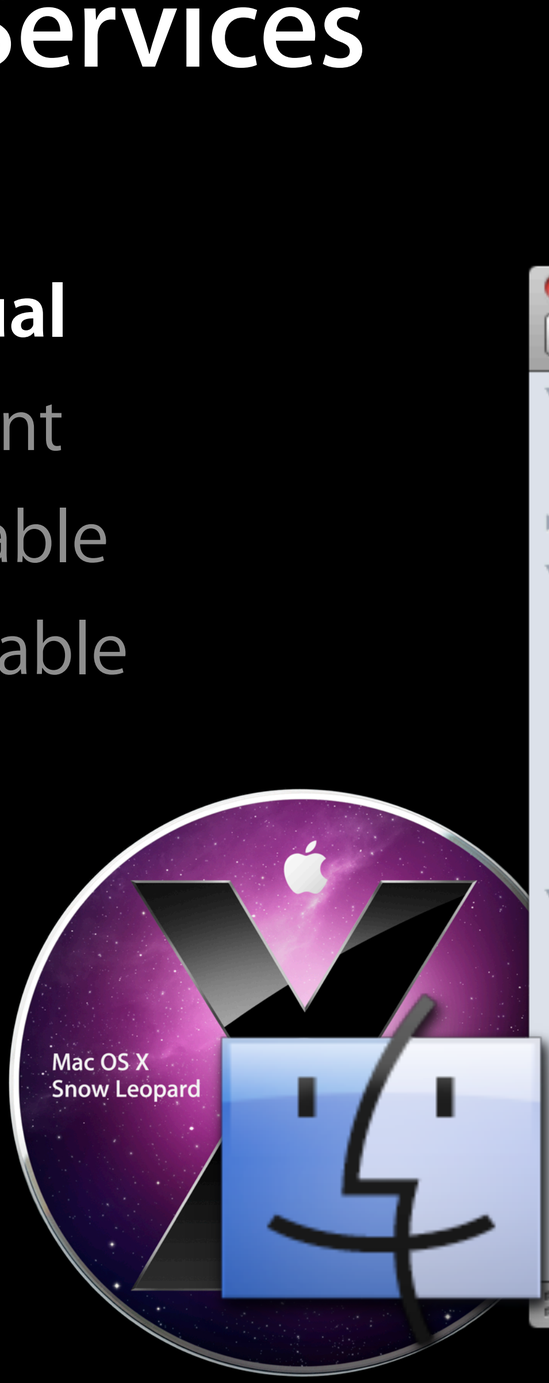
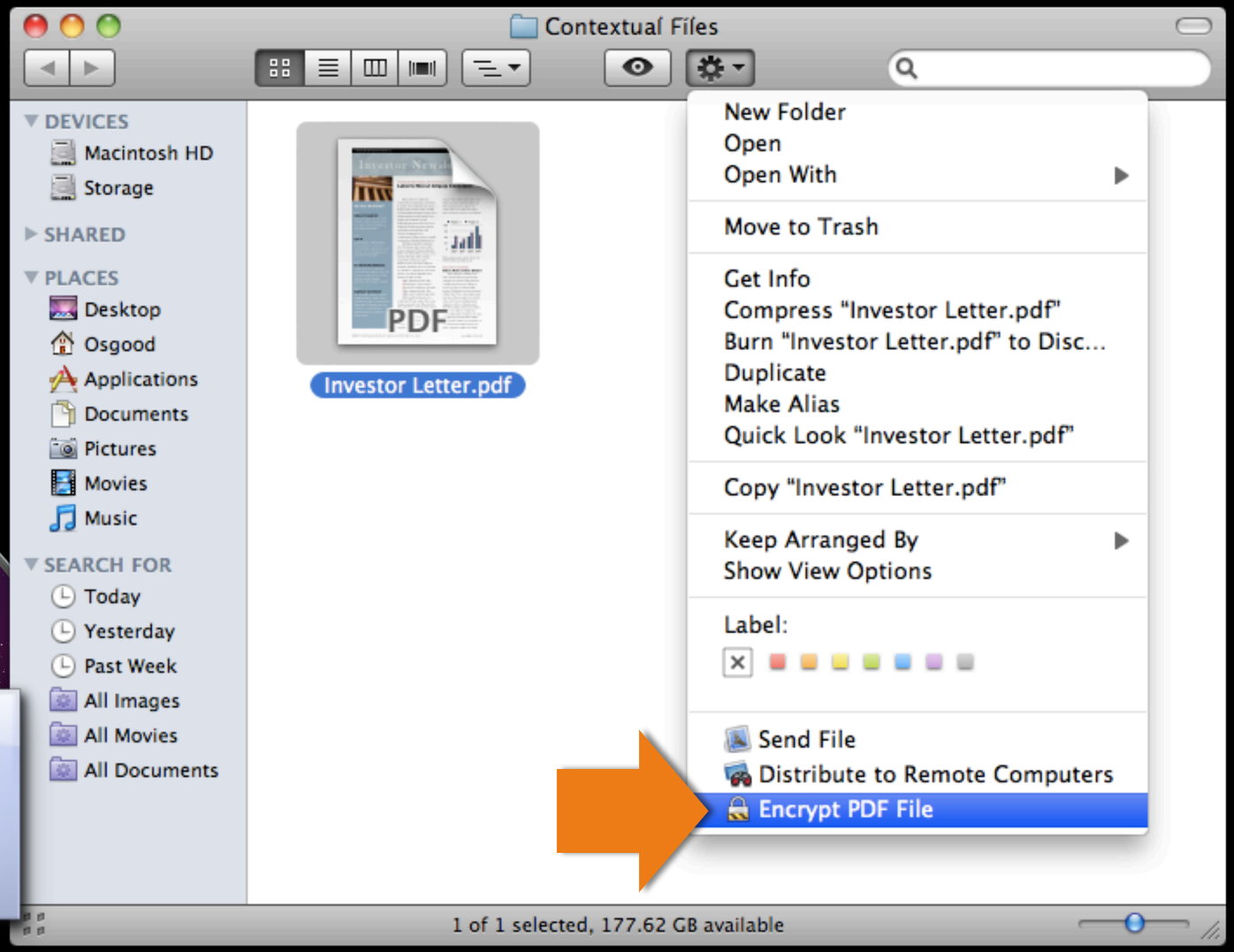


PDF File



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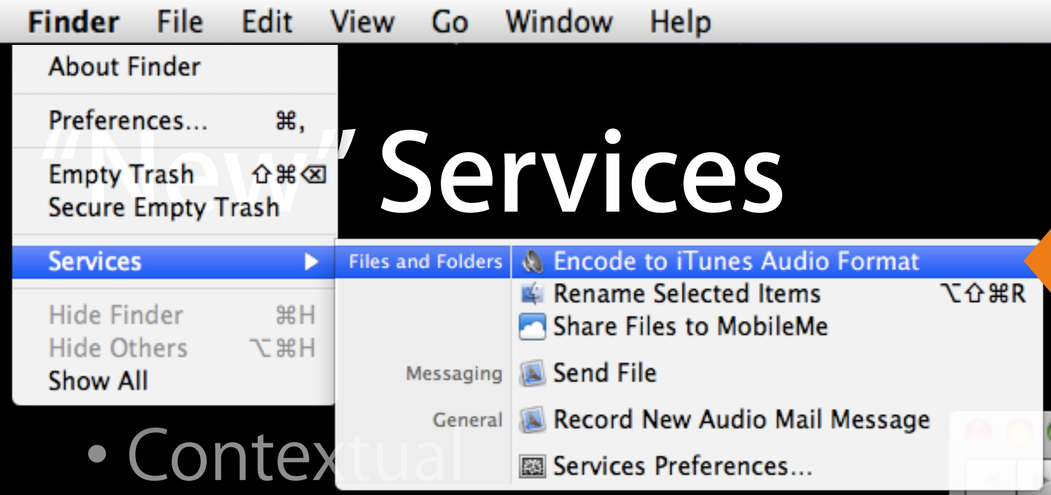
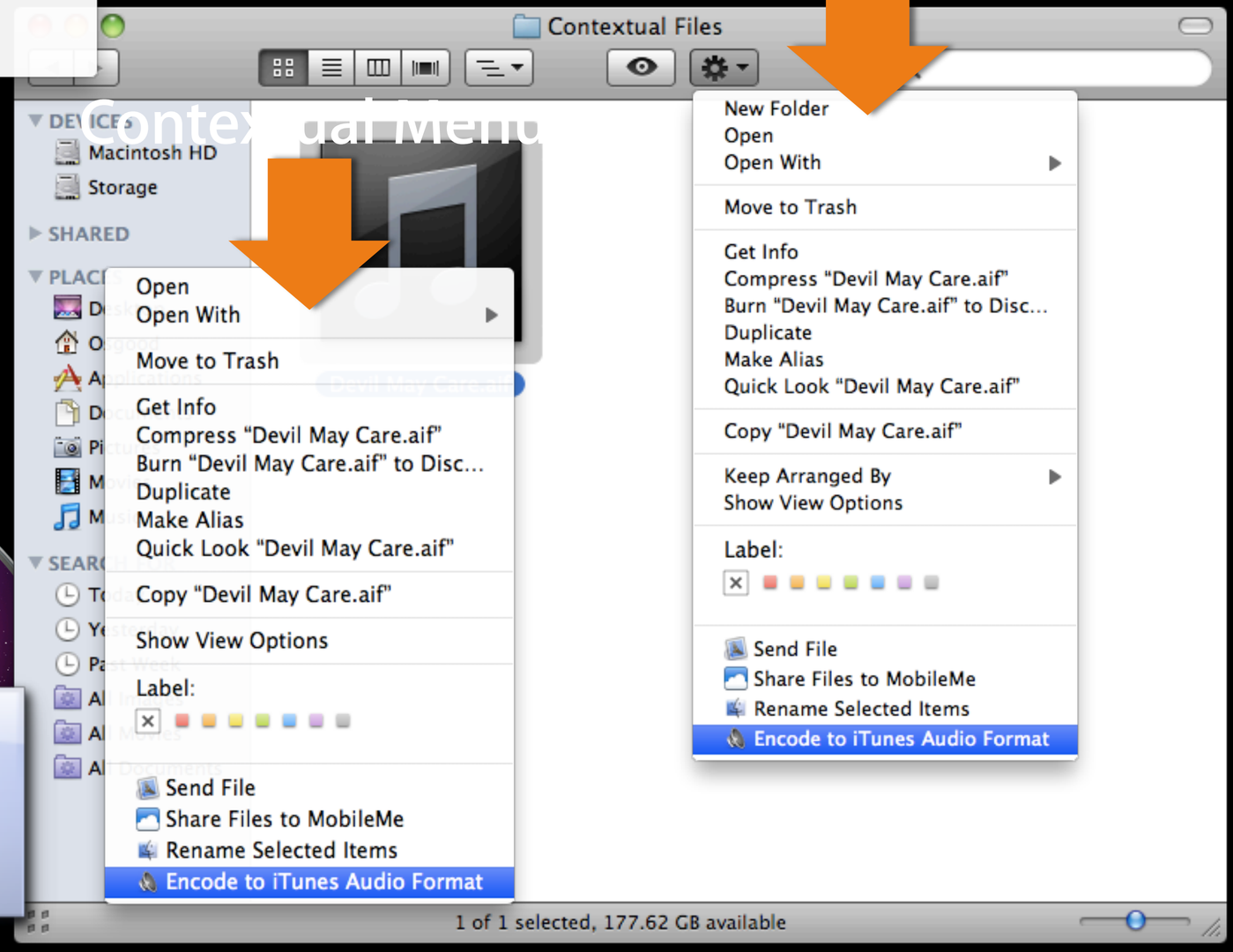


Services Menu

Action Menu



“New” Services

- **Contextual**
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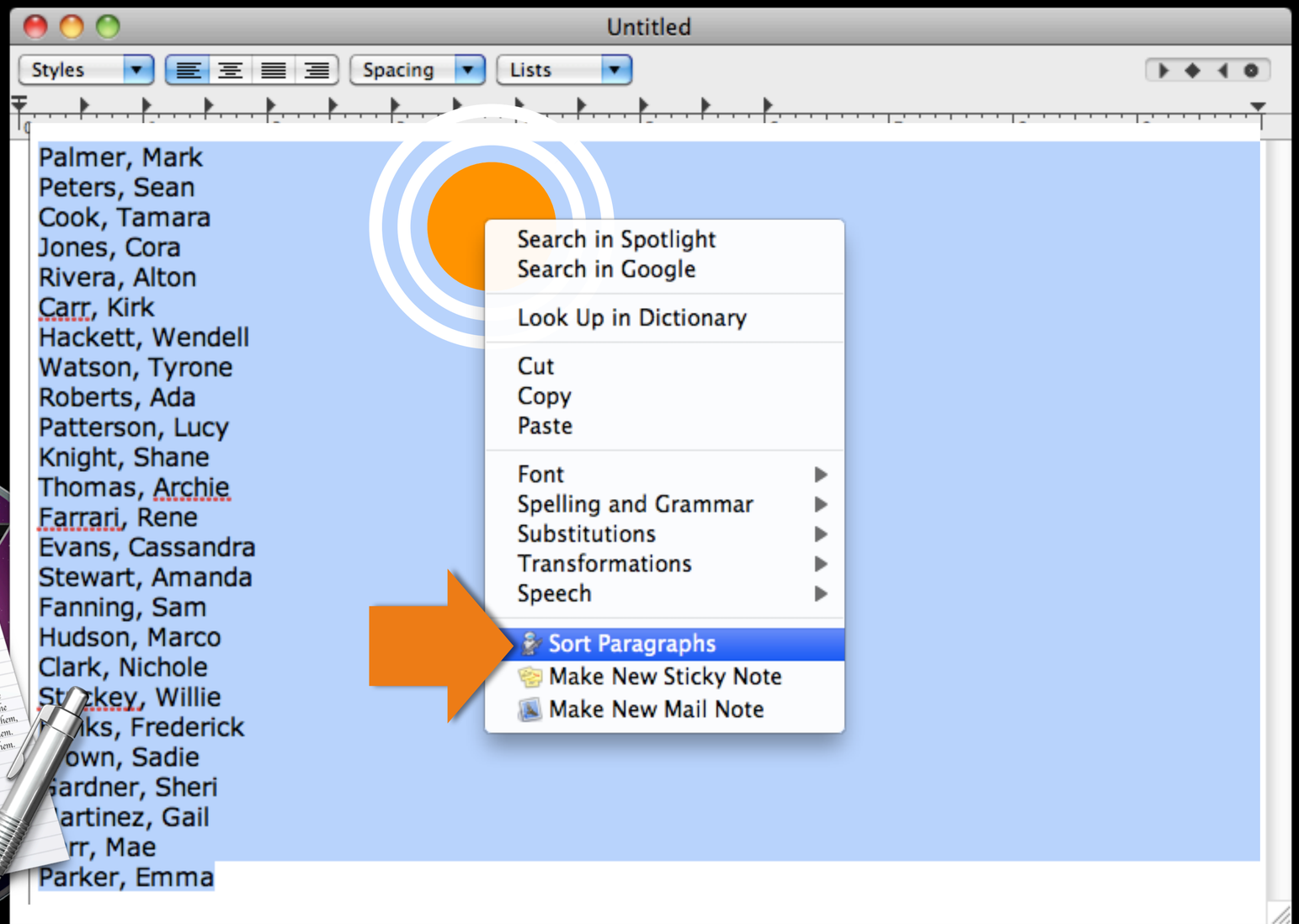
- Customizable

Selected Text



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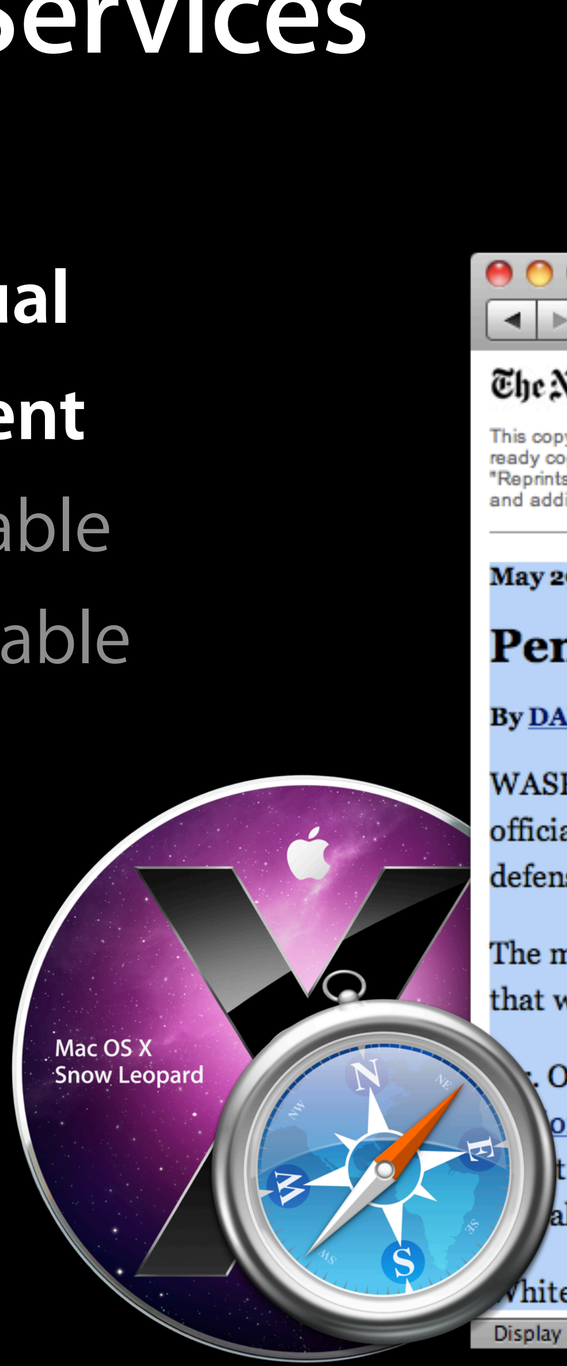
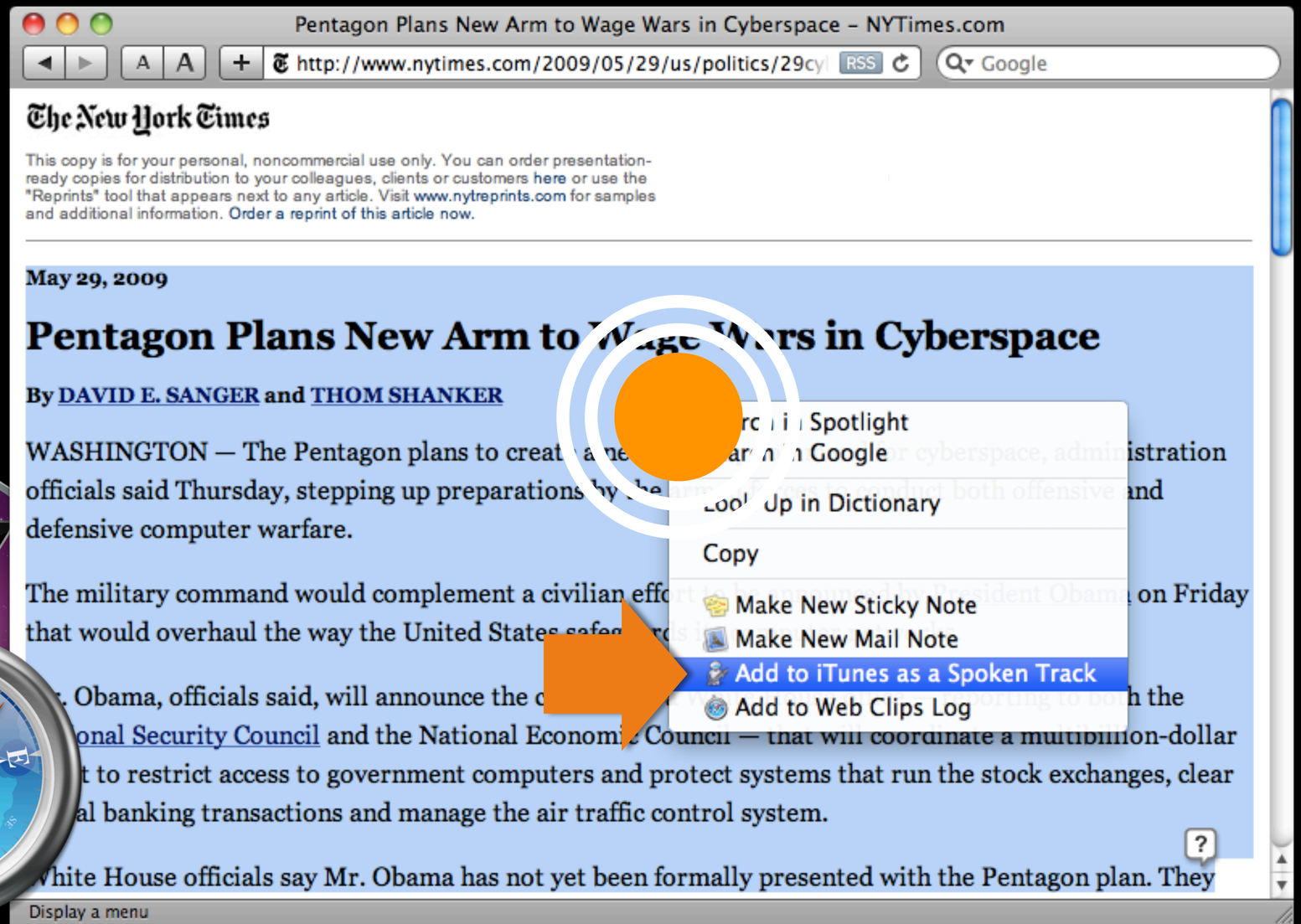


Selected Text



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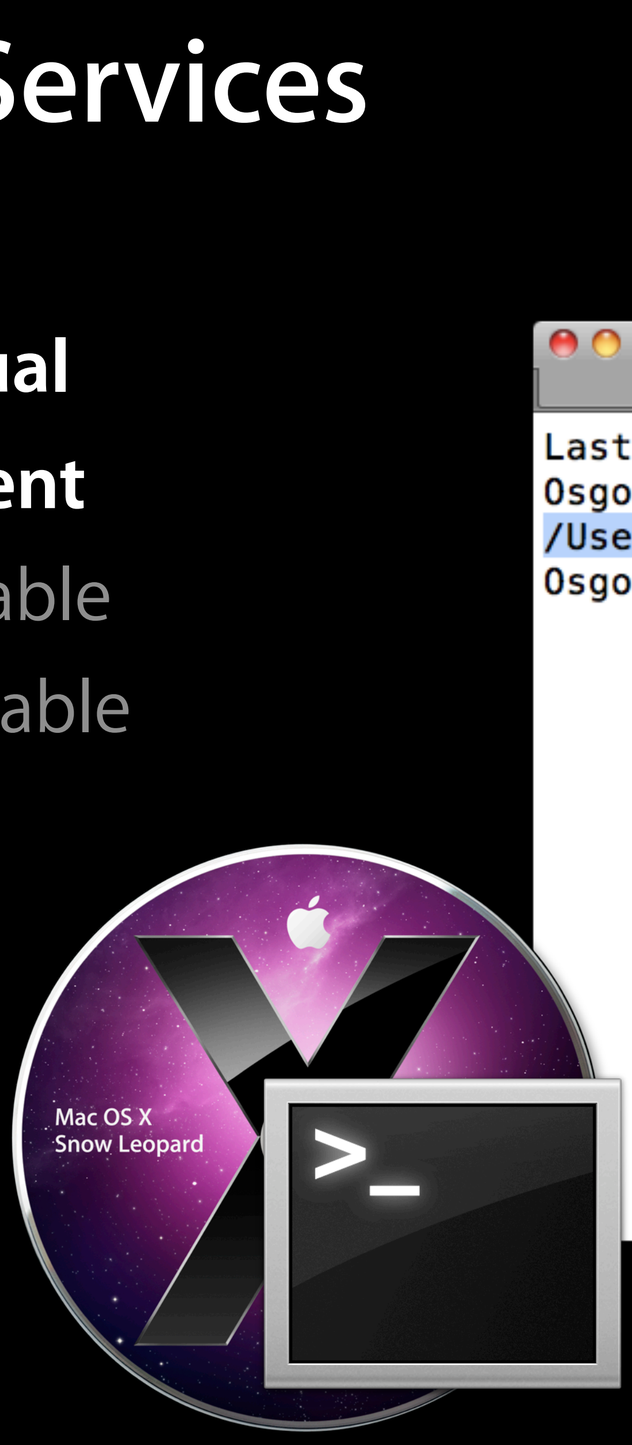
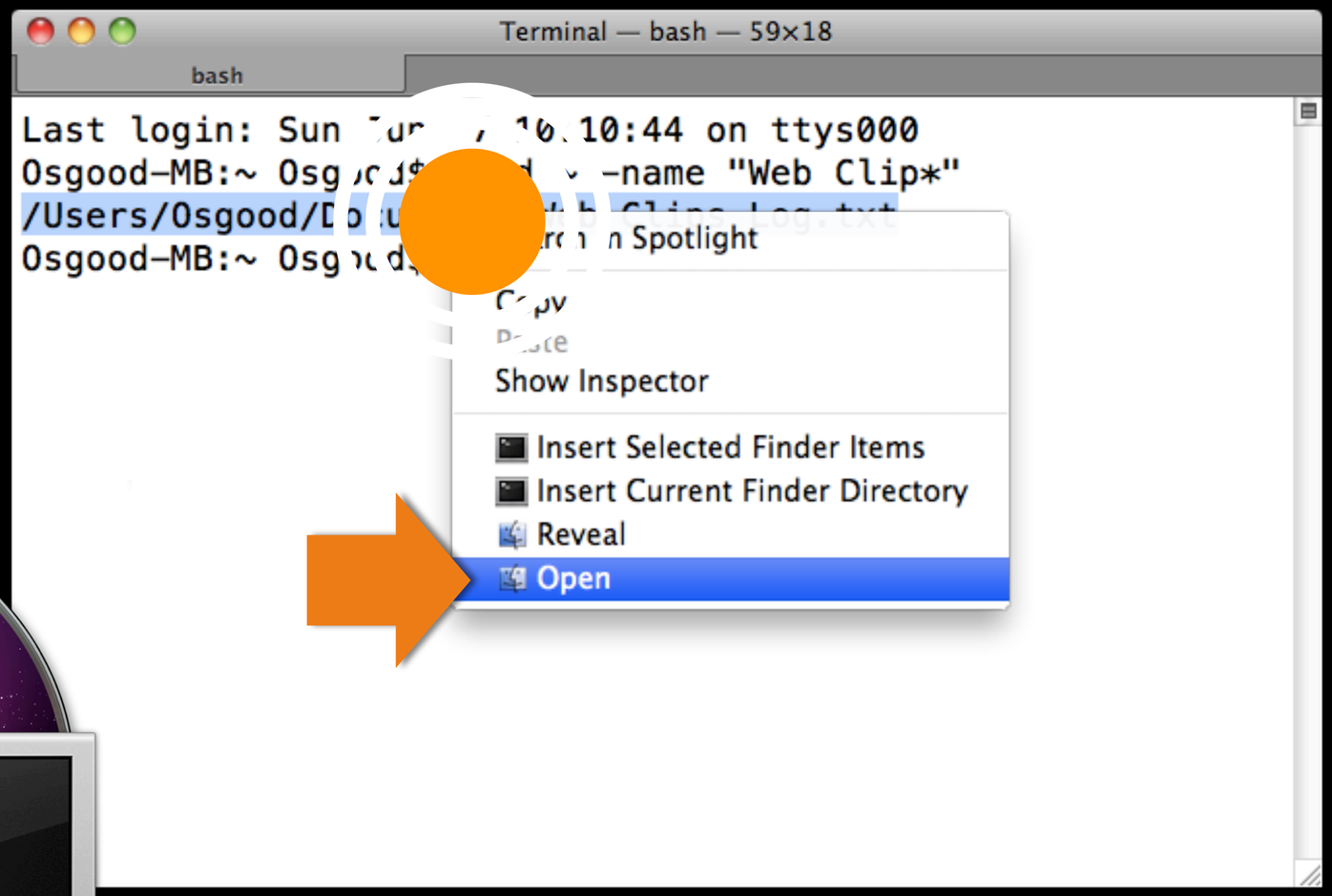


Selected Text



“New” Services

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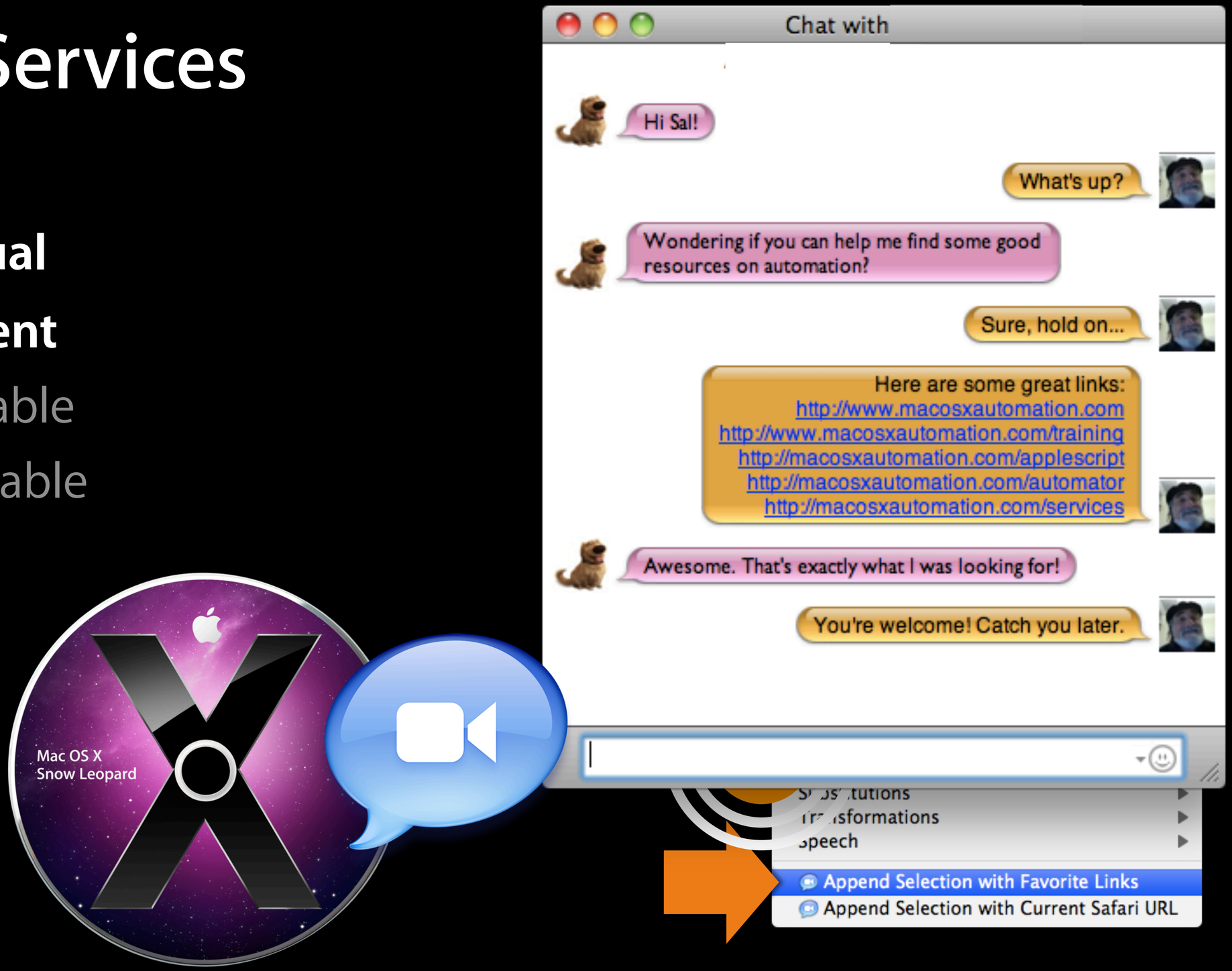

“New” Services

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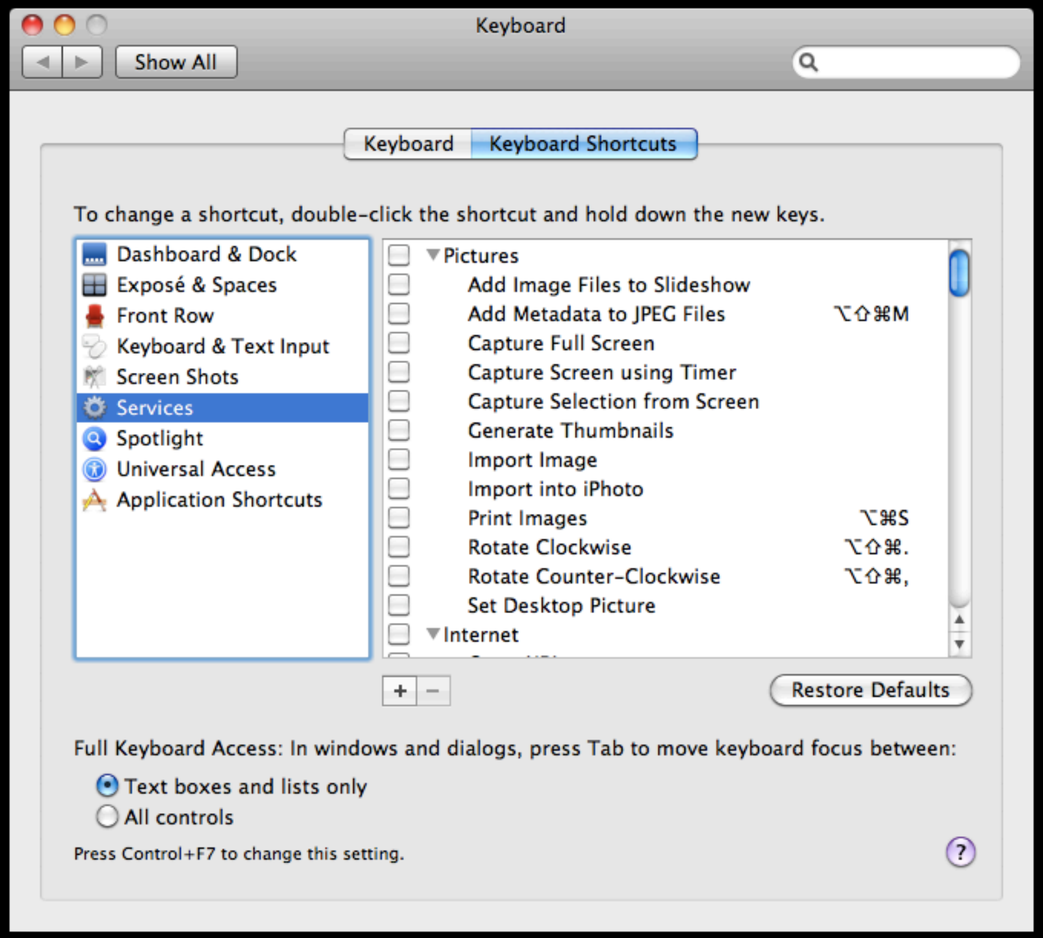
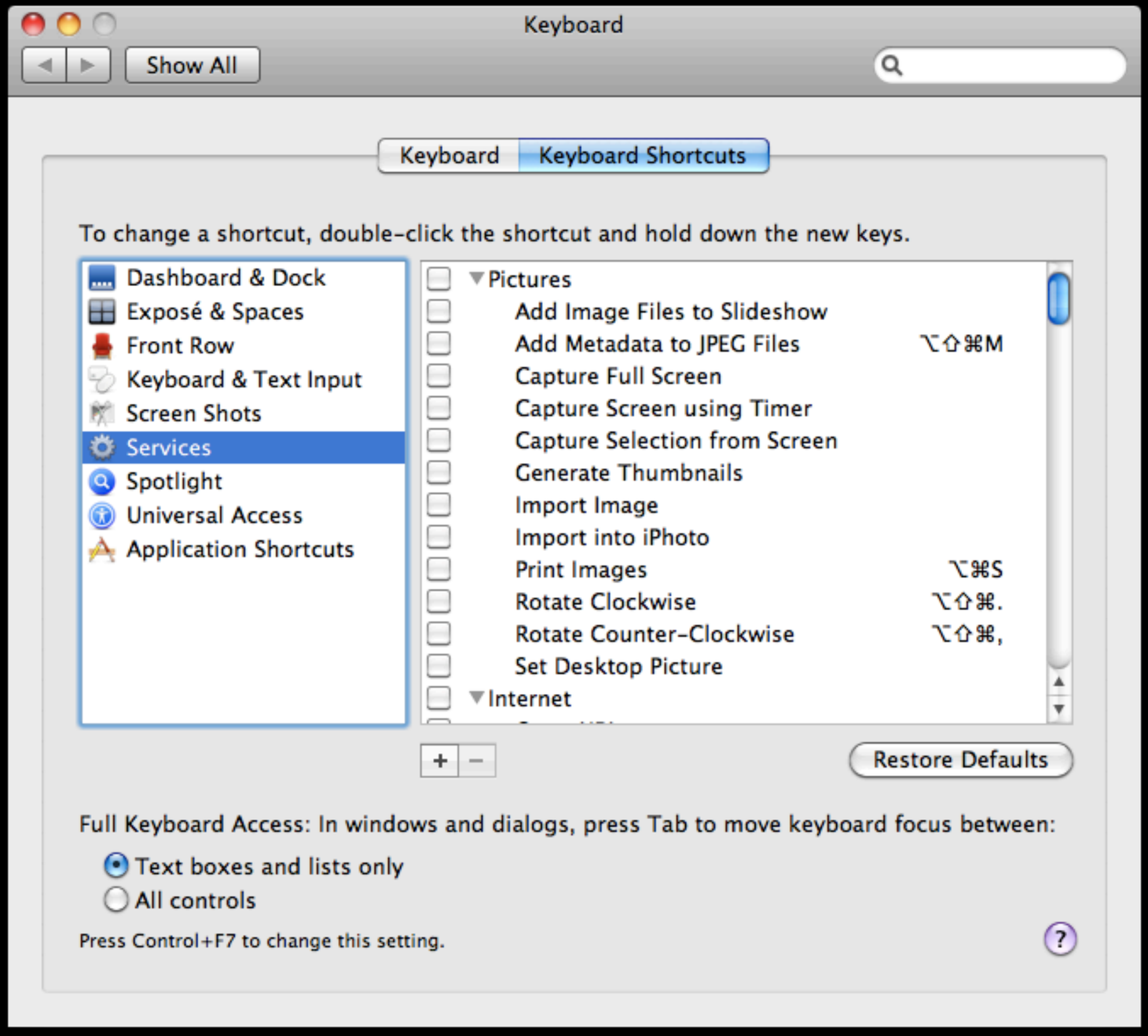
“New” Services

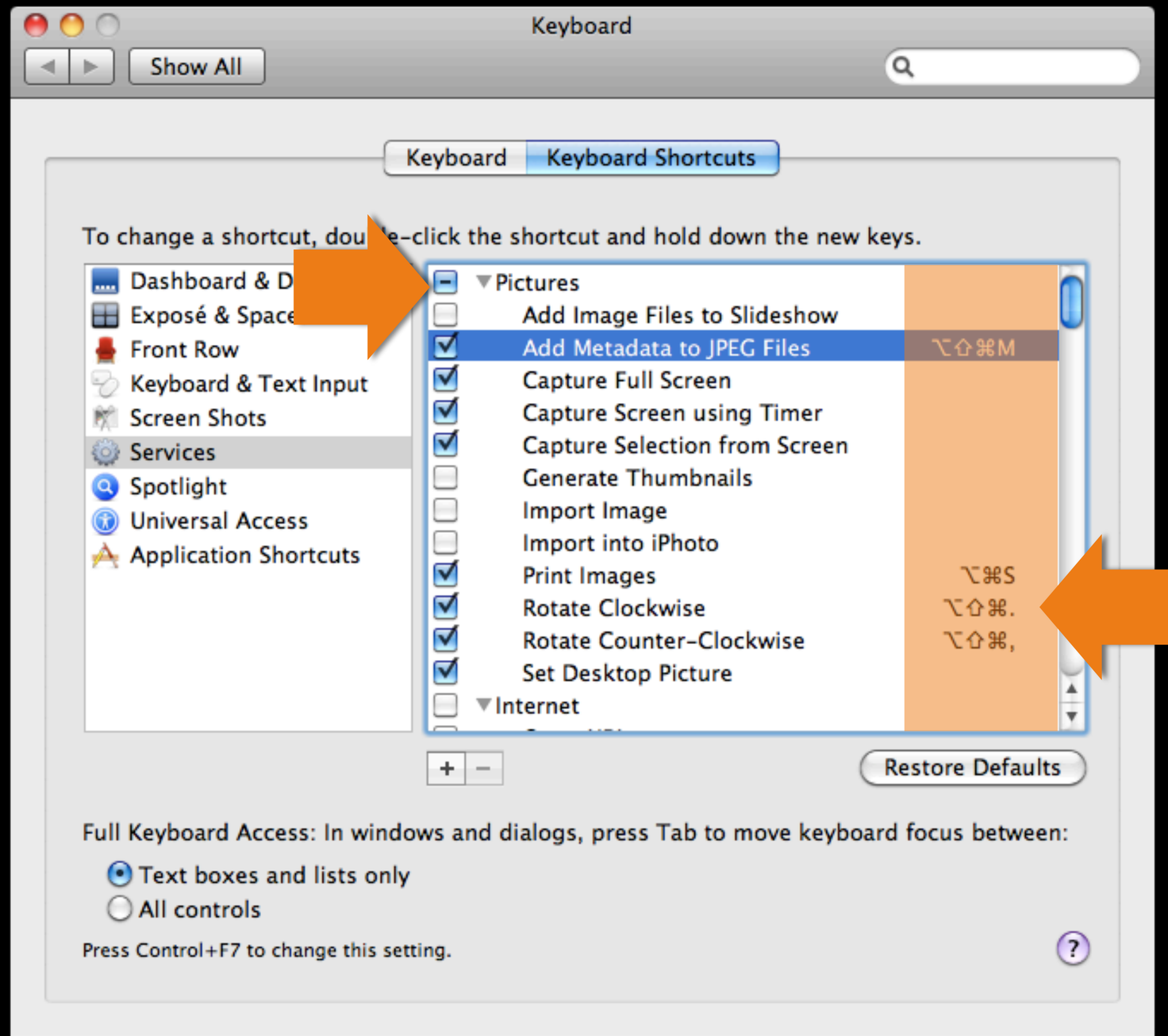


- Contextual
- Convenient
- **Configurable**
- Customizable

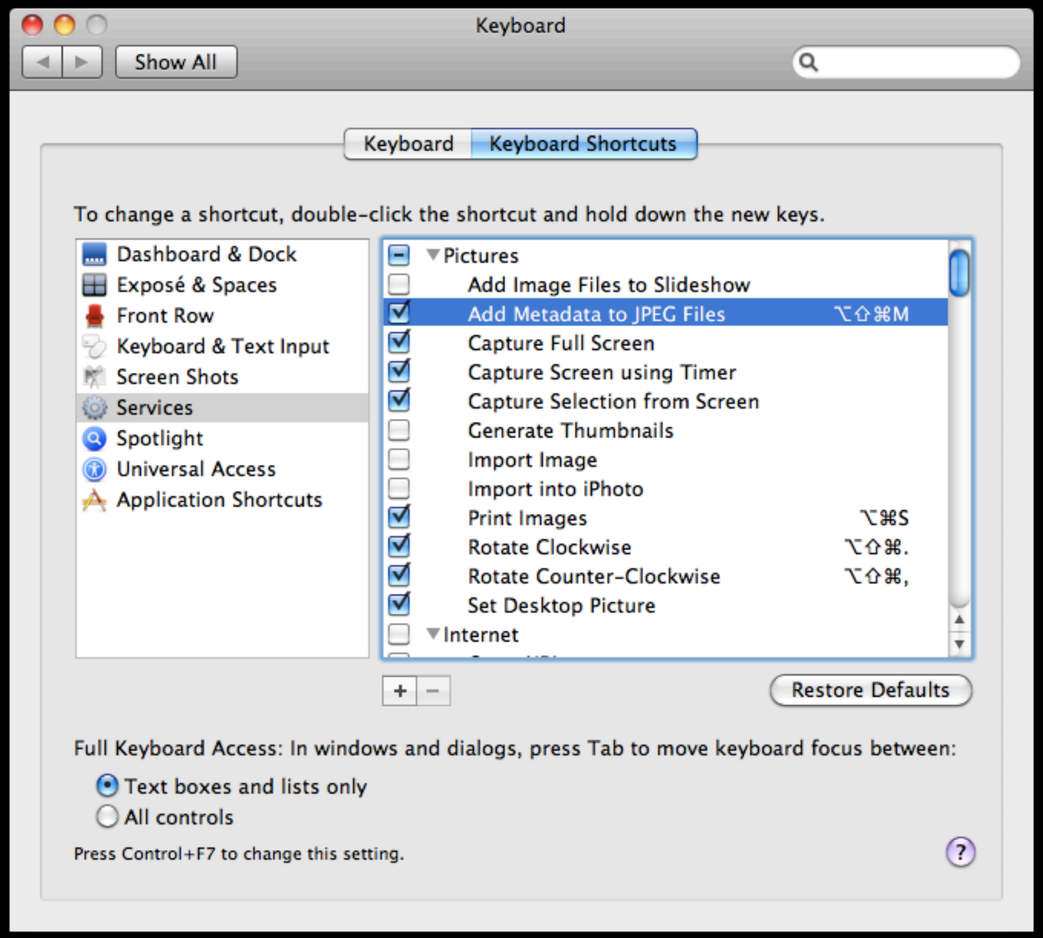
Services Preferences



Assign Key Shortcuts



“New” Services



- Contextual
- Convenient
- **Configurable**
- Customizable

“New” Services

- Contextual
- Convenient
- Configurable
- Customizable

“New” Services

- Contextual
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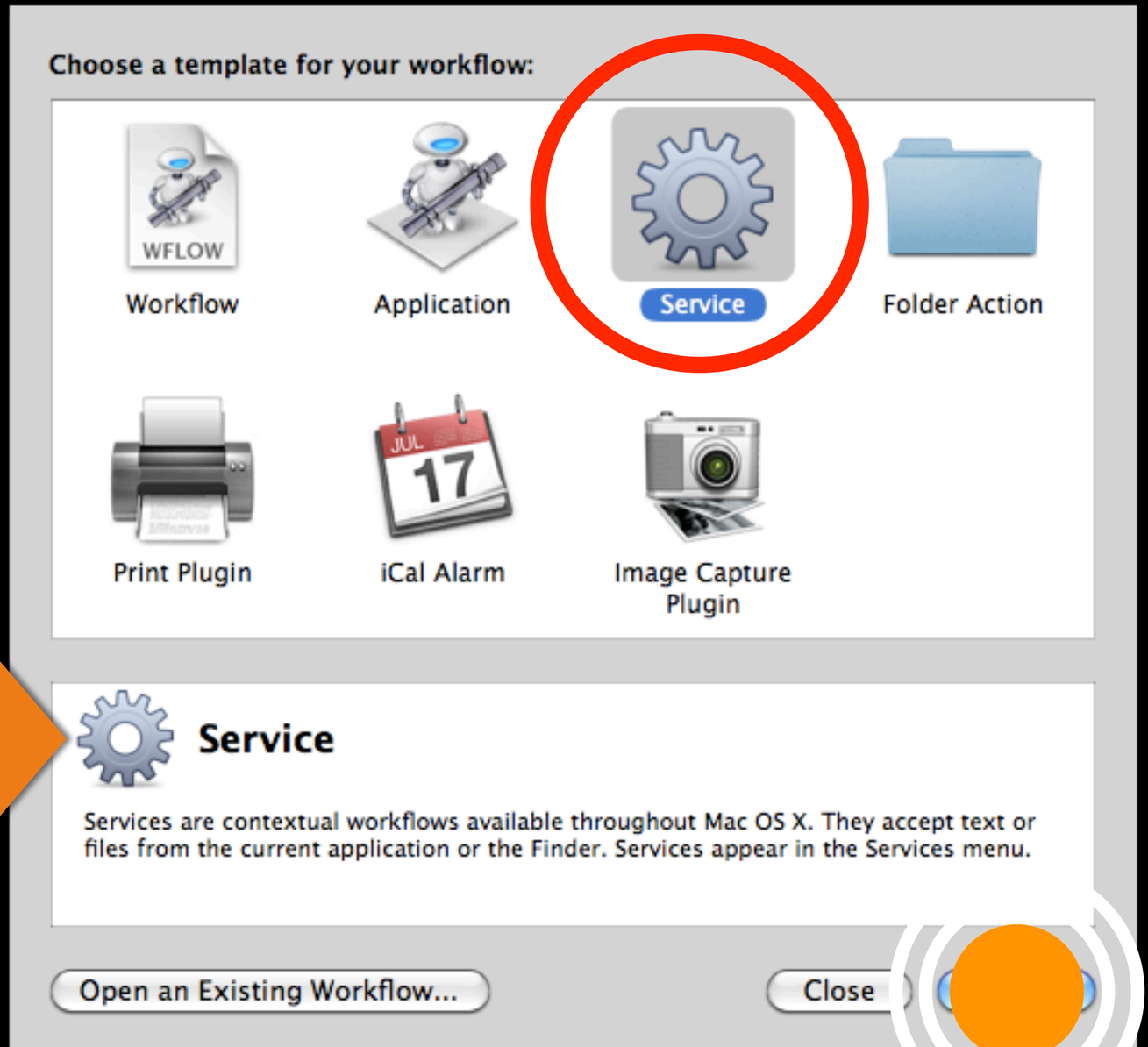
Services Workflow Template



Untitled (Service)

Input Settings

Show Library | Media | Record | Step | Stop | Run

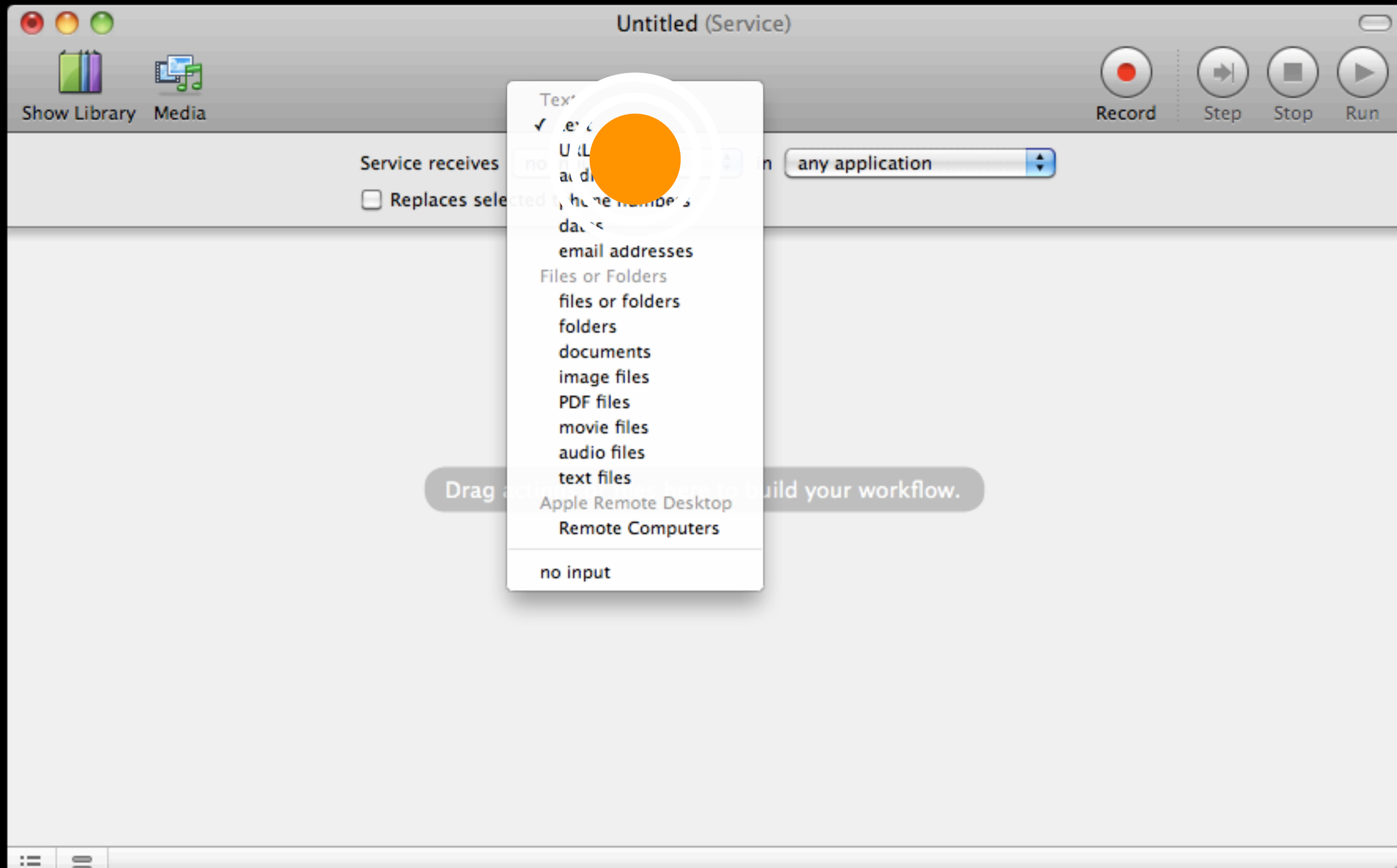
Service receives [no input] ❶ in [any application] ❷

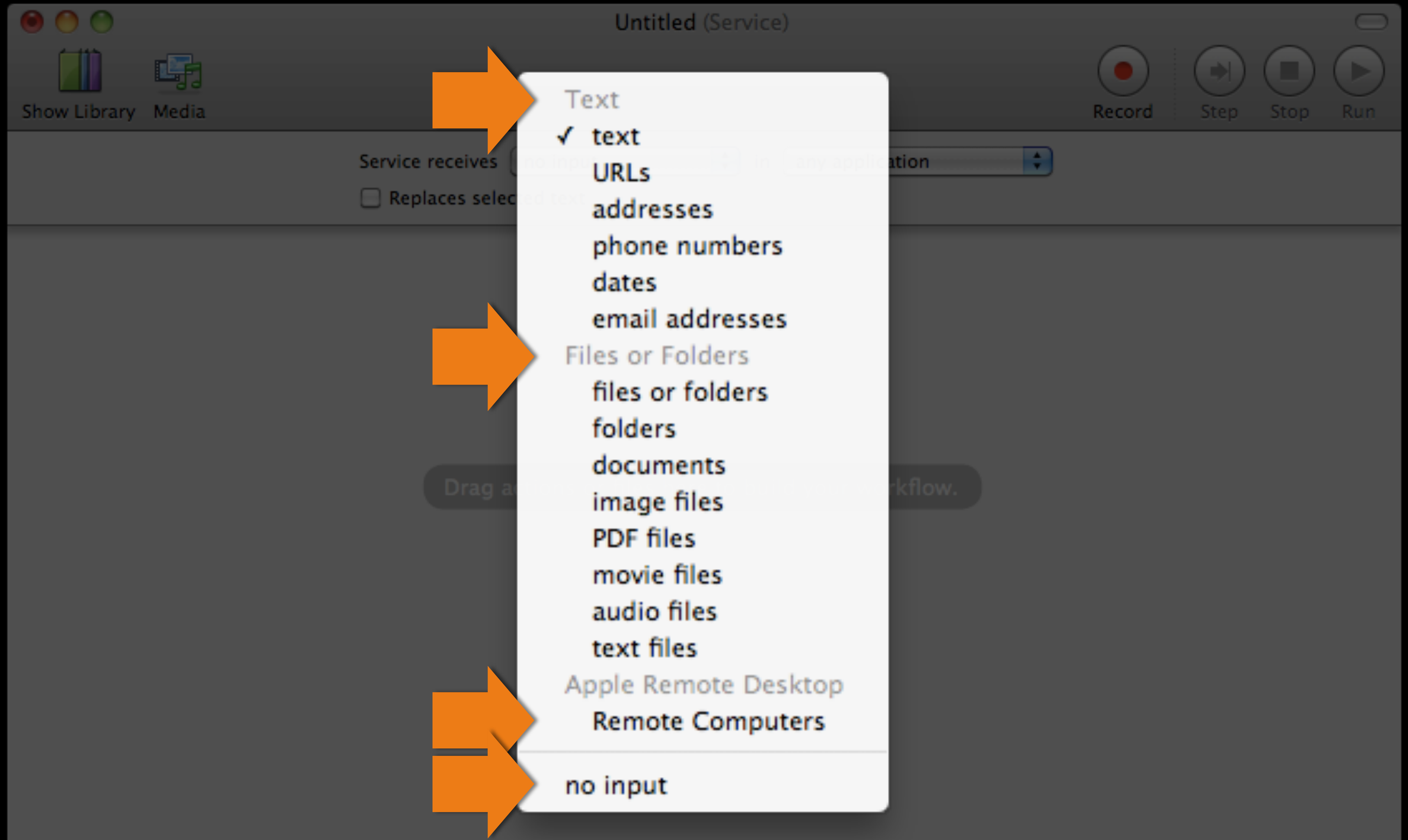
❸ Replaces selected text

❶ Input Data Type

❷ Target Application

❸ Replace Selection


Untitled (Service)
Show Library
Media
Record
Step
Stop
Run
Service receives
any application
Replaces sele
email addresses
Files or Folders
files or folders
folders
documents
image files
PDF files
movie files
audio files
text files
Apple Remote Desktop
Remote Computers
no input
Drag
uild your workflow.


Untitled (Service)
Show Library
Media
Record
Step
Stop
Run
Service receives
Replaces selec
Text
text
URLs
addresses
phone numbers
dates
email addresses
Files or Folders
files or folders
folders
documents
image files
PDF files
movie files
audio files
text files
Apple Remote Desktop
Remote Computers
no input

Untitled (Service)

Show Library | Media | Record | Step | Stop | Run

Service receives | any application

Replaces sele

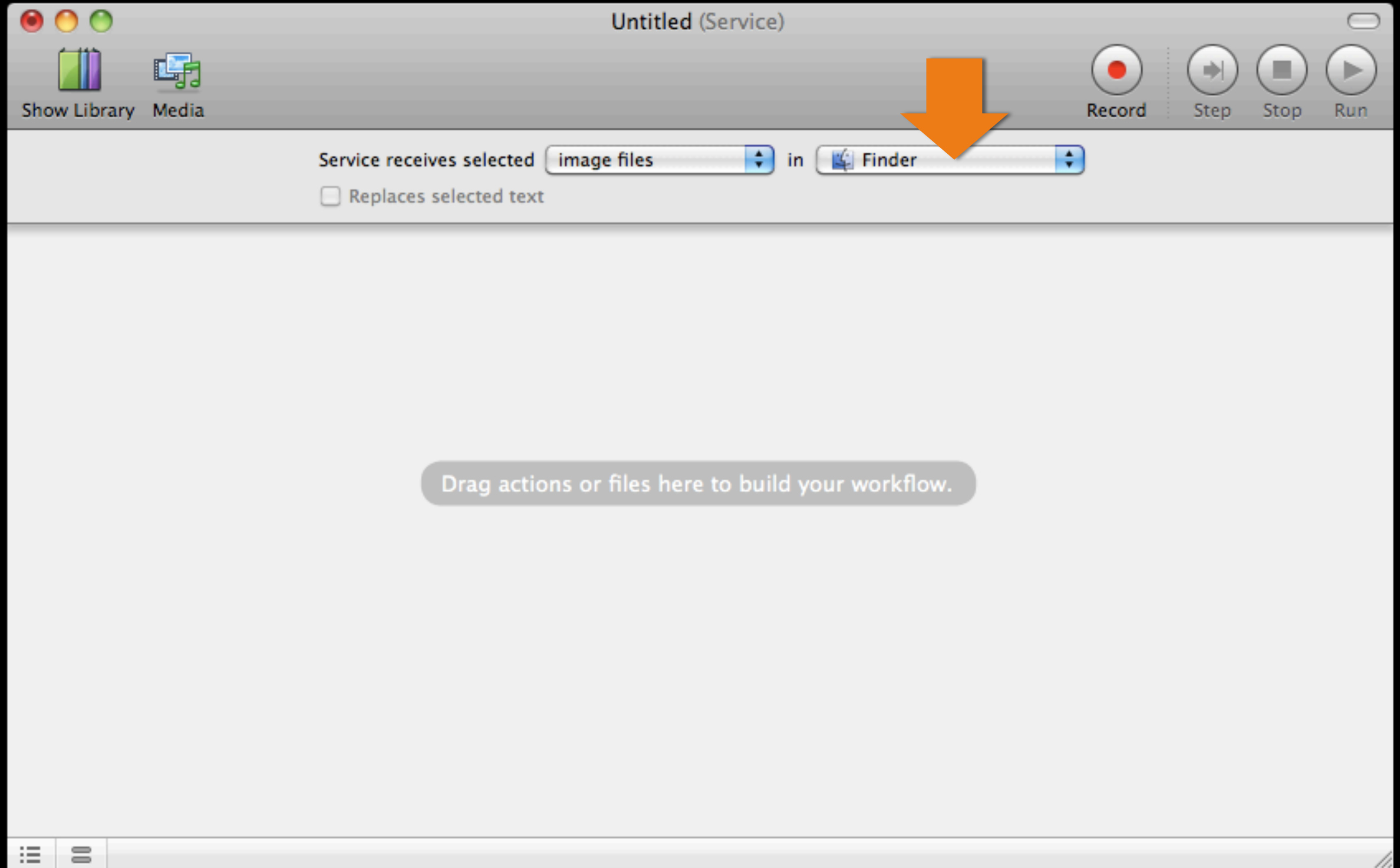
Text
- ✓ text
- URLs
- addresses
- phone numbers
- dates
- email addresses

Files or Folders
- files or folders
- folders
- documents
- image files
- PDF files
- movie files
- audio files
- text files

Apple Remote Desktop
- Remote Computers

no input

Drag … uild your workflow.


Untitled (Service)
Show Library
Media
Record
Step
Stop
Run
Service receives selected
image files
in
Finder
Replaces selected text
Drag actions or files here to build your workflow.

Untitled (Service)

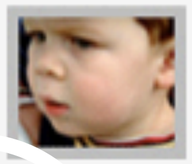
Show Library Media Record Step Stop Run

Service receives selected image files in Finder

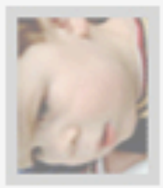
Replaces selected text

Rotate Images

Left



Before



After

Results Description

Untitled (Service)

Show Library | Media | Record | Step | Stop | Run

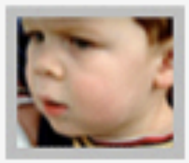
Service receives selected image files in Finder

Save Service as:

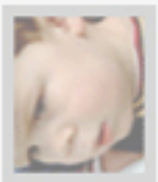
Cancel | Save

Rotate Images

Left



Before



After

Results | Options | Description

Show this action when the workflow runs

Show only the selected items

Untitled (Service)

Show Library | Media | Record | Step | Stop | Run

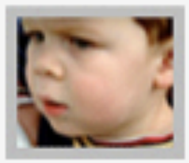
Service receives selected image files in Finder

Save Service as:

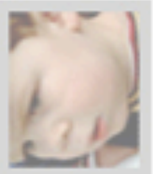
Cancel

Rotate Images

Left



Before



After

Results | Options | Description

Show this action when the workflow runs

Show only the selected items

Rotate Selected Images (Service)

Show Library | Media | Record | Step | Stop | Run

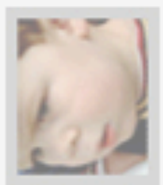
Service receives selected image files in Finder

Replaces selected text

Rotate Images

Left

Before



After

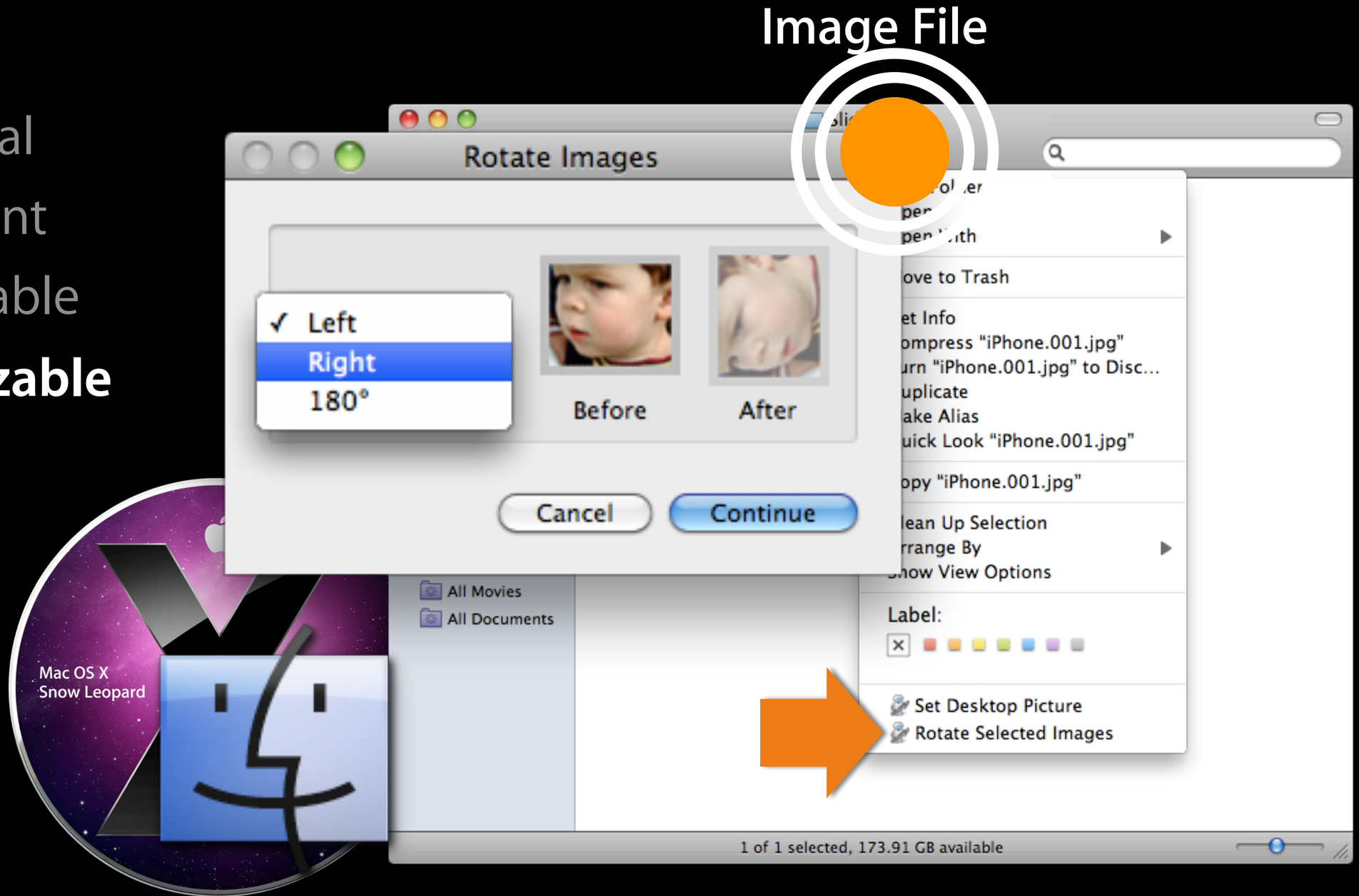
Results | Options | Description

Show this action when the workflow runs

Show only the selected items

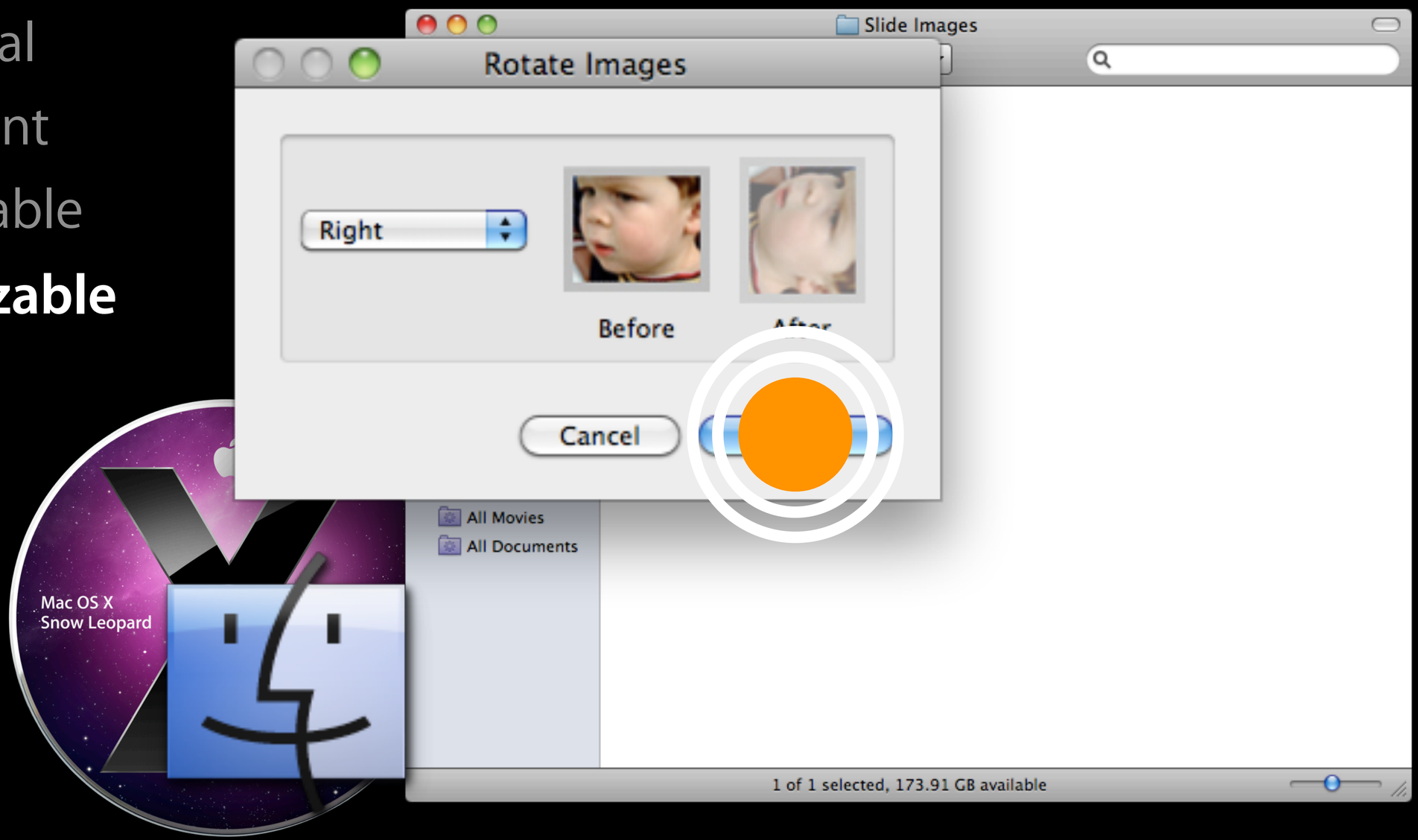
“New” Services

- Contextual
- Convenient
- Configurable
- **Customizable**



“New” Services

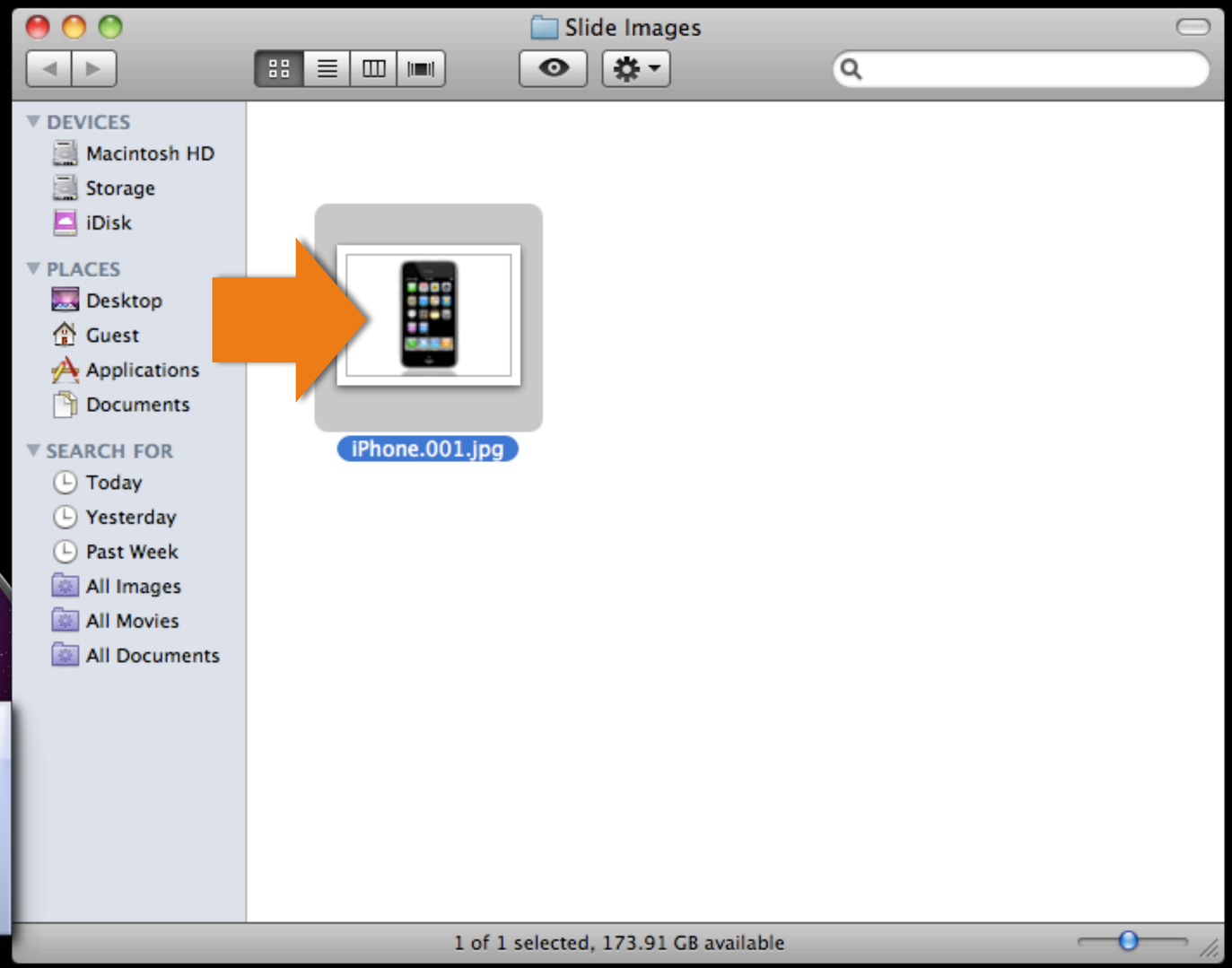
- Contextual
- Convenient
- Configurable
- **Customizable**



“New” Services

- Contextual
- Convenient
- Configurable
- **Customizable**

Image File



Services “Aware” Snow Leopard

Contextual

Convienient

Configurable

Customizable

Mac OS X
Snow Leopard

Demo

Steve Hayman and Sal Soghoian
DOS Amigos

Services in Snow Leopard

Contextual

Convienient

Configurable

Customizable

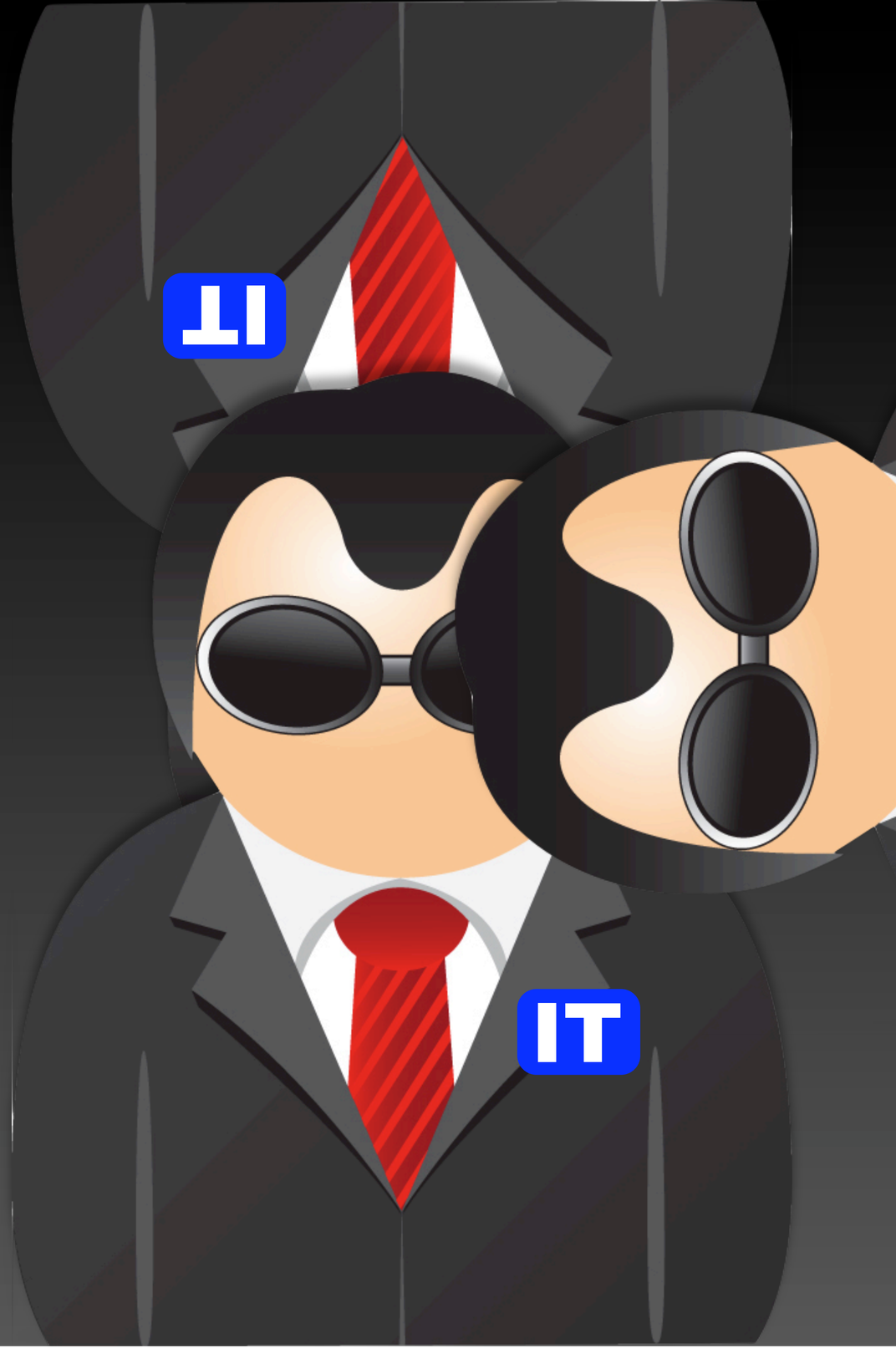
Services for Administrators

Services for Getting Every Job Done

Services designed for local, network, and client compters

Services for IT

- Admin Computers
- Managing Networked Computers
- Assistance Tools for Clients



Admin Services

- Finder and CLI Integration
- Contextual Terminal Extensions
- Data Gthering

Management Services

- Classroom Setup & Cleanup
- Software Installation
- Simplify Common Scenarios

Client Services

- Research
- Document Check-In
- Disk Item Management

1) FInder CLI

2) Open New Terminal WIndow cd to current Finder location

3) Man Page

4) Open as root

ARD

1) Identify Computer (Honking)

2) Terminal SSH to selected computers

3) Lock screens, copy homework, unlock screens

1) Wolfram Research

2) Web Clip

3) Disk Image Password Protect

4) Homework Check-In

Demo

Steve Hayman and Sal Soghoian
DOS Amigos

Developers and Services

Implementing Connective Technology

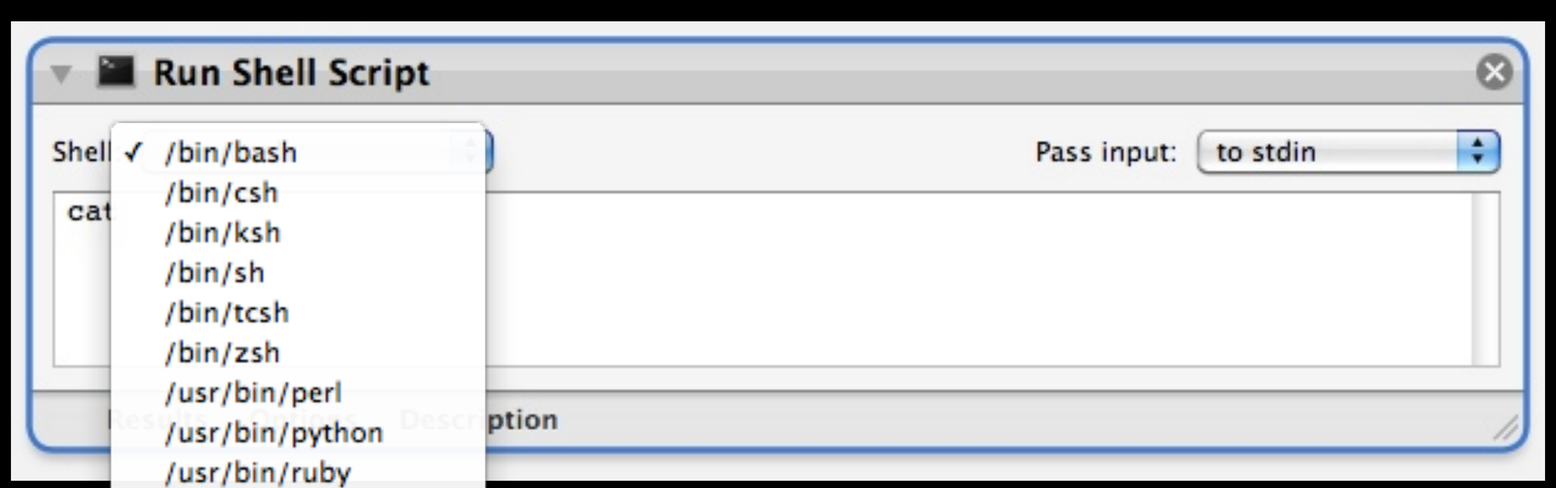
Customizing the Toolset

Custom Scripted Actions

Use any OS-supported scripting language

Run Shell Script

bash, csh, ksh, sh, tcsh, zch, perl, python, ruby



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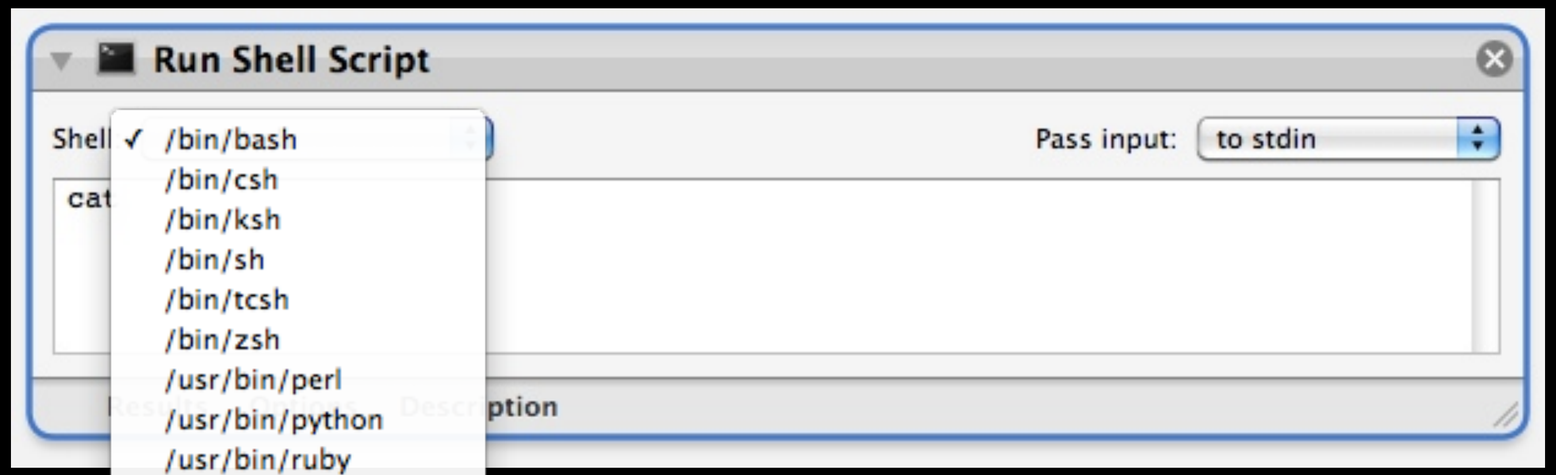
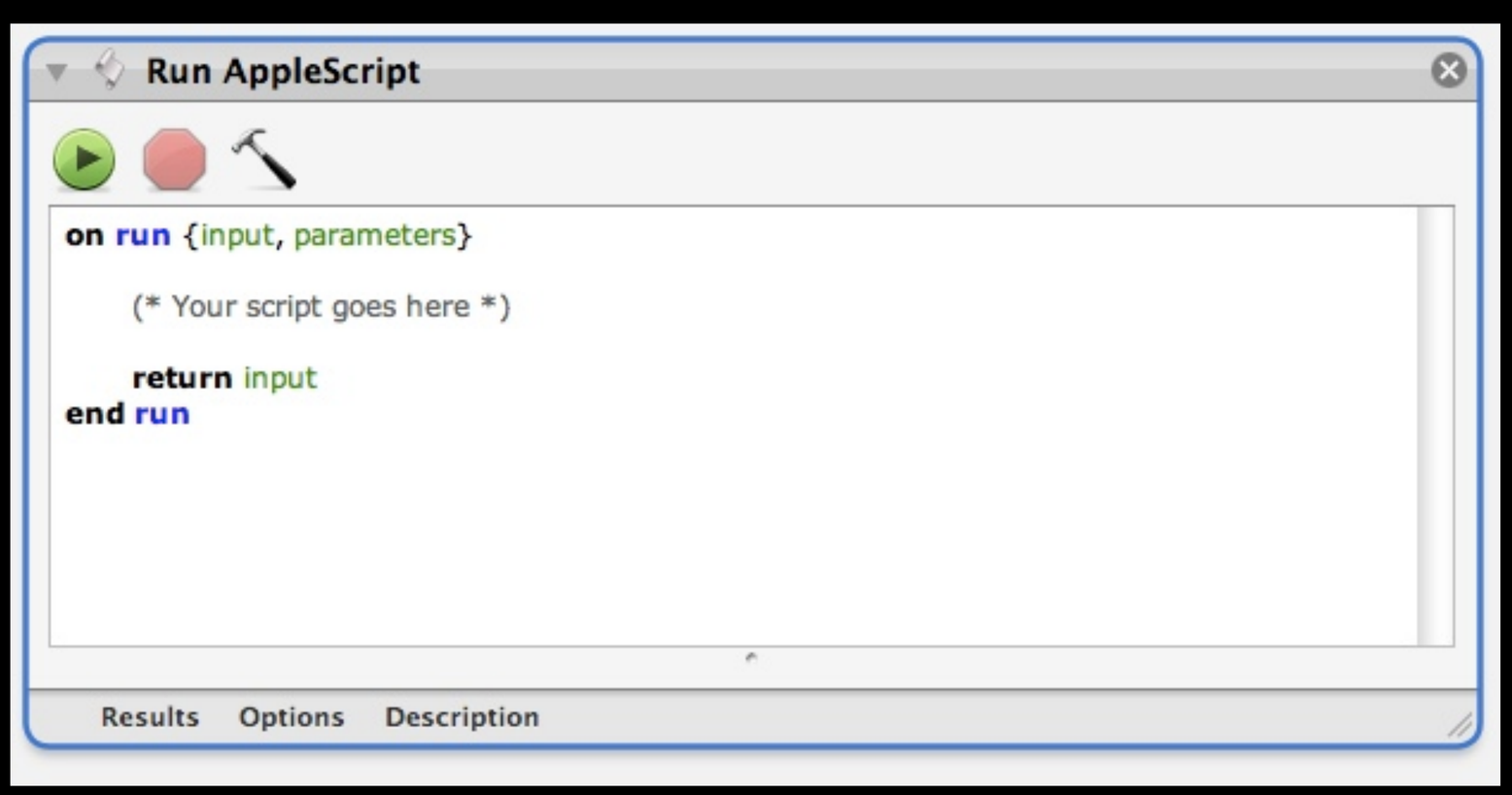


Custom Scripted Actions

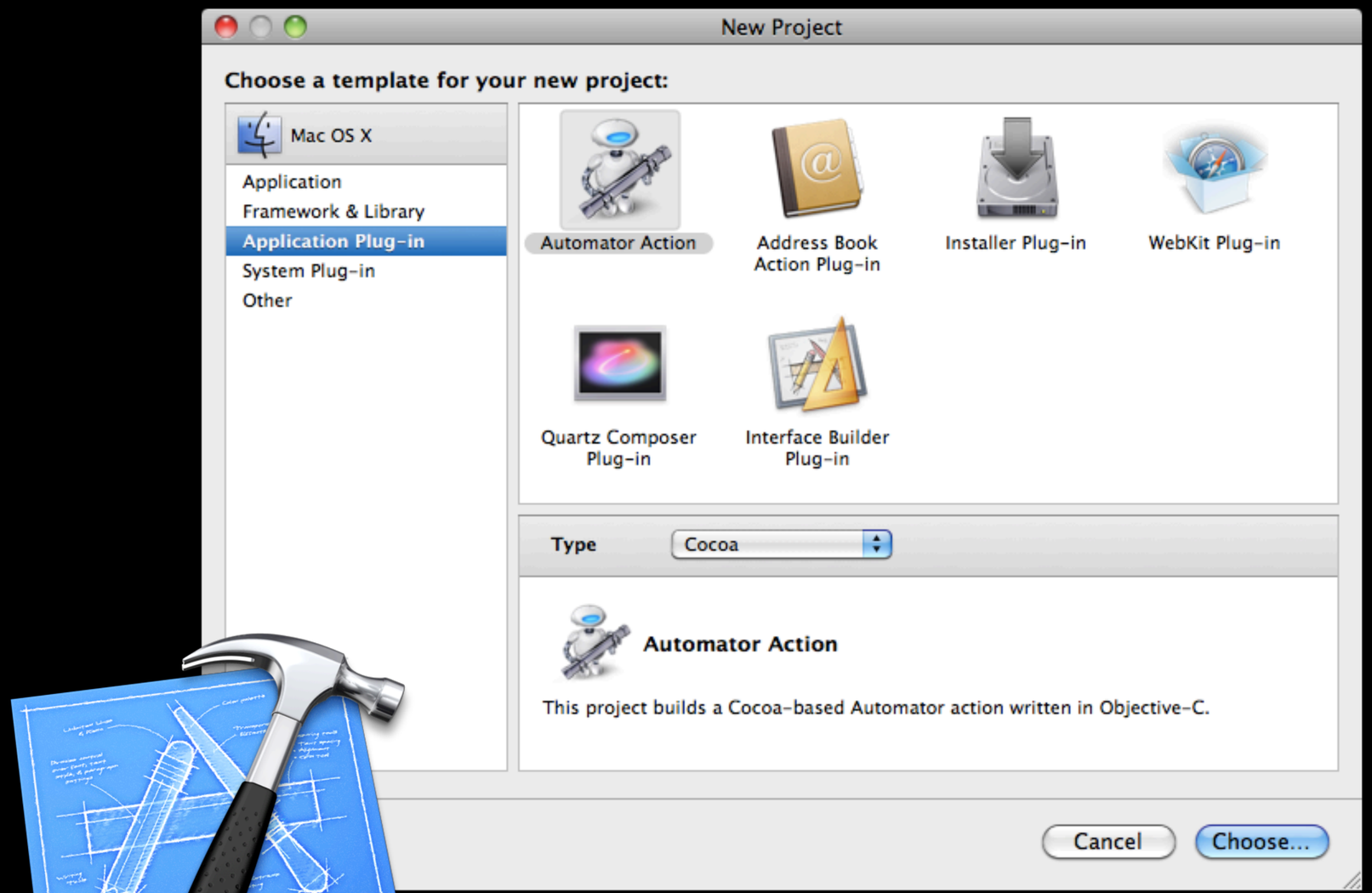
Use any OS-supported scripting language

Run AppleScript

AppleScript, AppleScript-Cocoa, Shell

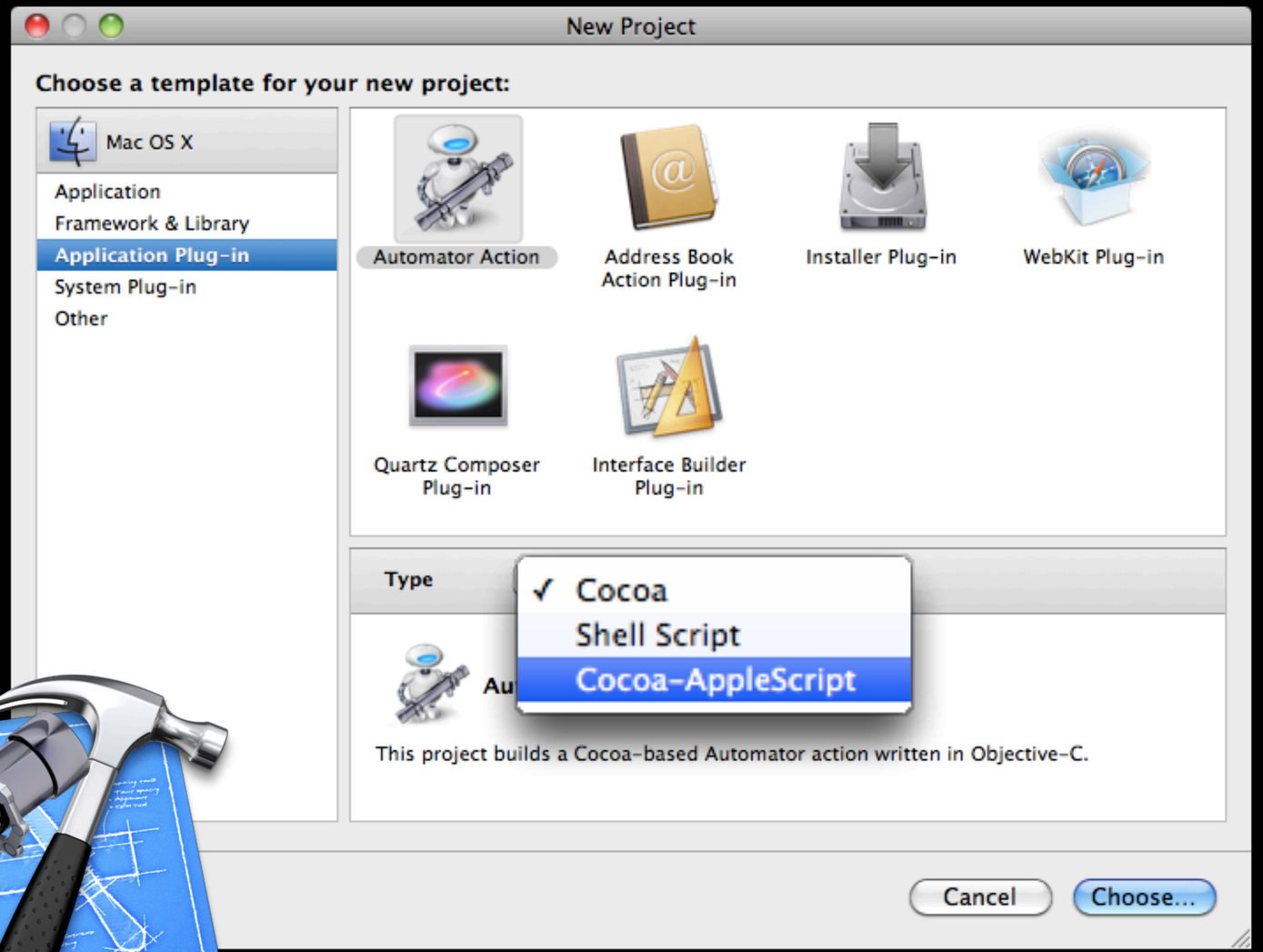


Custom Action Projects



Custom Action Projects

- Action Templates
  - Cocoa
  - Shell Script
  - Cocoa-AppleScript



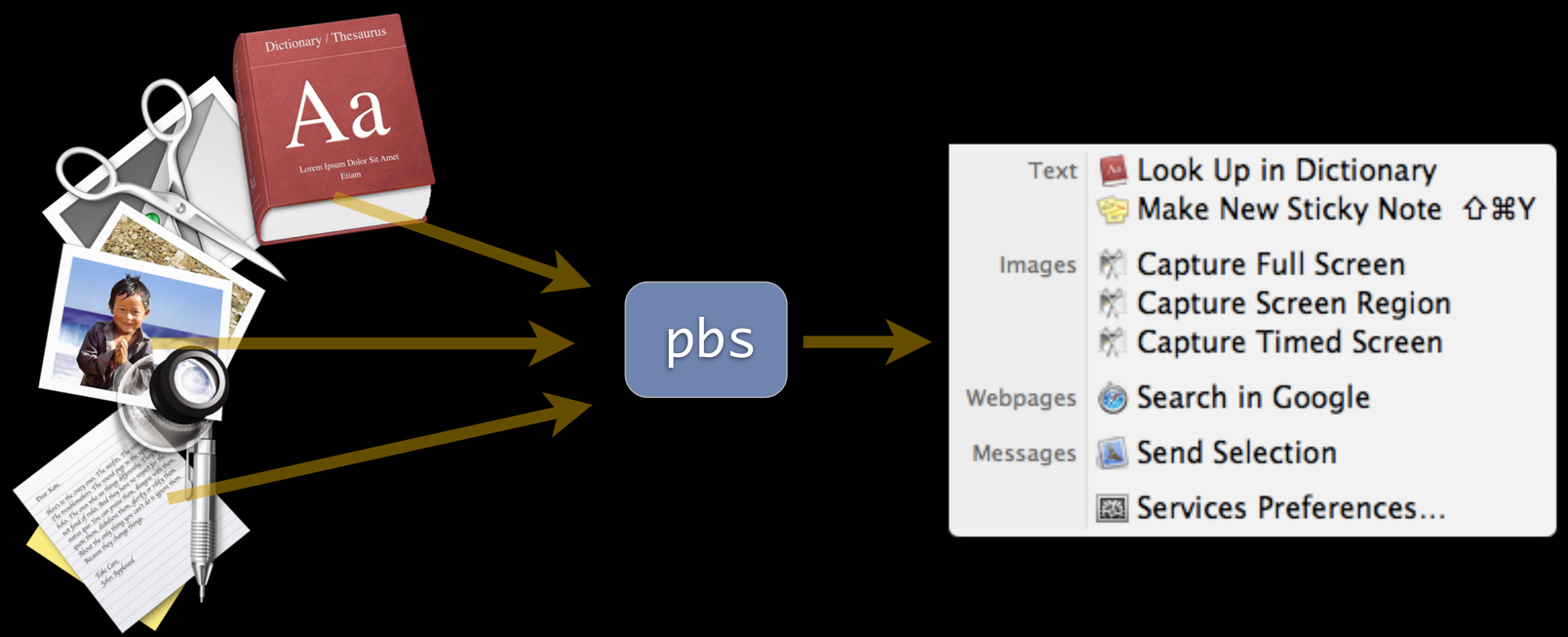
Publishing Services

109 • Pasteboards, Services, and Interoperability on a Mac

Location
Thursday 2:00PM

How the Services menu is built

- You declare Services in your app's Info.plist
- pbs scans apps and caches the Services declarations
- AppKit builds the Services menu



How the Services menu is built

```
<key>NSServices</key>
<array>
    <dict>
        <key>NSMenuItem</key>
        <dict>
            <key>default</key>
            <string>Open Selected File</string>
        </dict>
        <key>NSMessage</key>
        <string>openFile</string>
        <key>NSSendTypes</key>
        <array>
            <string>public.plain-text</string>
        </array>
```

How the Services menu is built

```
<key>NSServices</key>
<array>
    <dict>
        <key>NSMenuItem</key>
        <dict>
            <key>default</key>
            <string>Open Selected File</string>
        </dict>
        <key>NSMessage</key>
        <string>openFile</string>
        <key>NSSendTypes</key>
        <array>
            <string>public.plain-text</string>
        </array>
        <key>NSRequiredContext</key>
```

Determines whether your Service is enabled by default (even if empty)

Mention how this is the way to get services enabled by default

Publishing Services

109 • Pasteboards, Services, and Interoperability on a Mac

Location
Thursday 2:00PM

Make Your App Scriptable

4026 • Scriptability Lab

OS X Lab B
Wednesday 12:00PM

Summary

Services in Snow Leopard

Summary

- Services in Snow Leopard enable powerful tools at the "Point-of-Need"
- Services in Snow Leopard are:
  - Contextual
  - Convenient
  - Configurable
  - Customizable

More Information

Matt Drance
Sharing Technology Evangelist
mdrance@apple.com

www.macosxautomation.com

www.macosxautomation.com/training

www.macosxautomation.com/training

www.macosxautomation.com

Mac OS X Automation

POWER TO COMMAND

Sooner or later every individual, business, or organization is challenged to perform repetitive or complex procedures on their computers. Whether the task is renaming numerous files, batch processing images, or building documents using data from multiple sources, the need for powerful automation tools is shared by all computer users. Mac OS X is designed, from the ground up, for automation and offers a variety of integrated tools and technologies to solve your automation challenges.

AppleScript

THE LANGUAGE OF AUTOMATION

AppleScript is an English-like language used to create script files and applets that control the actions of the computer and the applications that run on it. AppleScript scripts can "think" and make decisions based on user-interaction or by parsing and analyzing data, documents or situations. With support integrated into hundreds of Apple and third-party applications, such as Microsoft Office, AppleScript provides motivated customers an approachable way to address their specific automation requirements by writing their own scripts or using those developed by others.

ADVANTAGES

- Good for detailed automation needs
- Very powerful and customizable
- Supported by hundreds of applications and system components

REQUIREMENTS

- Writing scripts requires some knowledge of AppleScript

Services

POWER WHERE YOU NEED IT

The Services menu, found in the Application menu of most applications, offers a wealth of powerful automation options. In Mac OS X, many applications and system components publish their abilities as "services," enabling the functionality of one application to be used with the items selected in another application. For example, using a Mail service from the Services menu, text selected within a Pages document can automatically be used to create a new outgoing message in Mail. Or the text of a long article displayed in Safari can be quickly summarized in a few concise sentences.

ADVANTAGES

- Accessed from the Application menu
- Supported by most applications that use standard interfaces

REQUIREMENTS

- No script or code writing knowledge required

Automator

YOUR PERSONAL AUTOMATION ASSISTANT

Automator delivers customizable automation to customers without the necessity of writing any scripts, routines, or computer code. Similar in concept to kitchen recipies, Automator enables users to create and execute an "automation recipe" by following a simple drag-and-drop process, relating the individual steps of a workflow to pre-crafted automation nuggets that are listed in the order in which the steps of the task are to be performed. If you can describe how to make a sandwich, you can use Automator!

ADVANTAGES

- Good for general automation needs
- Easy to use and somewhat customizable
- Works with many applications and system components

REQUIREMENTS

- Workflows are created using a simple drag-and-drop process

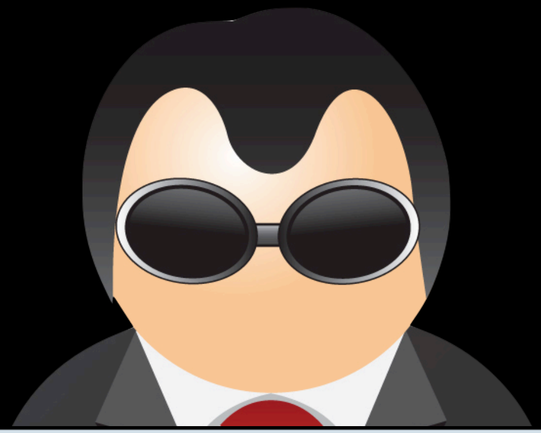
Related Sessions

109 • Pasteboards, Services, and Interoperability on a Mac	North Beach Thursday 2:00PM
616 • System Management with Apple Remote Desktop	Nob Hill Thursday 2:00PM
403 • AppleScript and Cocoa Bridge	North Beach Friday 10:30AM
404 • Using Automator and Services to Integrate with Mac OS X	North Beach Friday 2:00PM

Labs

1020 • Application Scripting and Automation Lab	OS X Lab A Tuesday 2:00PM
4026 • Scriptability Lab	OS X Lab B Wednesday 12:00PM
1021 • Application Scripting and Automation Lab	OS X Lab B Thursday 5:00PM
4002 • Automator and Services Lab	OS X Lab C Friday 9:00AM
4001 • AppleScript and Cocoa Bridge Lab	OS X Lab C Friday 2:00PM

Q&A



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WWDC09